CRPL-F 123

FOR OFFICIAL USE

IONOSPHERIC DATA

ISSUED
NOVEMBER 1954

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

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CONTENTS

SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given in Document No. 626-E referred to above.

a. For all ionospheric characteristics:

Values missing because of A, C, F, L, M, N, Q, S, or T are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of foF2 (and foE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of h'F2 (and h'E near sunrise and sunset) missing for this reason are counted usually as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of D are counted as equal to or greater than the upper limit of the recorder.

Values missing because of G are counted:

1. For foF2, as equal to or less than foF1.
2. For h'F2, as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic. This practice represents a change from that listed in issues previous to CRPL-F78.

Values missing for any other reason are omitted from the median count.

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because of E or G (and B when applied to the daytime E region only) are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

Values of fEs missing for any other reason, and values of h'Es missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D. C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If only four values or less are available, the data are considered insufficient and no median value is computed.

2. For the F2 layer, if only five to nine values are available, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as there are at least five values, the median is not considered doubtful.

3. For all layers, if more than half of the values used to compute the median are doubtful (either doubtful or interpolated), the median is considered doubtful.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

The tables and graphs of ionospheric data are correct for the values reported to the CRPL, but, because of variations in practice in the interpretation of records and scaling and manner of reporting of values, may at times give an erroneous conception of typical ionospheric characteristics at the station. Some of the errors are due to:

a. Differences in scaling records when spread echoes are present.

b. Omission of values when foF2 is less than or equal to foF1, leading to erronously high values of monthly averages or median values.

c. Omission of values when critical frequencies are less than the lower frequency limit of the recorder, also leading to erroneously high values of monthly average or median values.

These effects were discussed on pages 6 and 7 of the previous F-series report IRPL-F5.

Ordinarily, a blank space in the fEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of foE. Blank spaces at the beginning and end of columns of h'F1, foF1, h'E, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of h'F1 and foF1 is usually the result of seasonal effects.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. The following points are worthy of note:

a. Predictions for individual stations used to construct the charts may be more accurate than the values read from the charts since some smoothing of the contours is necessary to allow for the longitude effect within a zone. Thus, inasmuch as the predicted contours are for the center of each zone, part of the discrepancy between the predicted and observed values as given in the F series may be caused by the fact that the station is not centrally located within the zone.

b. The final presentation of the predictions is dependent upon the latest available ionospheric and radio propagation data, as well as upon predicted sunspot number.

c. There is no indication on the graphs of the relative reliability of the data; it is necessary to consult the tables for such information.

The following predicted smoothed 12-month running-average Zürich sunspot numbers were used in constructing the contour charts:

Month	Predicted Sunspot Number									
	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945
December		15	33	53	86	108	114	126	85	38
November		16	38	52	87	112	115	124	83	36
October	10	17	43	52	90	114	116	119	81	23
September	8	18	46	54	91	115	117	121	79	22
August	8	18	49	57	96	111	123	122	77	20
July	8	20	51	60	101	108	125	116	73	
June	9	21	52	63	103	108	129	112	67	
May	10	22	52	68	102	108	130	109	67	
April	10	24	52	74	101	109	133	107	62	
March	11	27	52	78	103	111	133	105	51	
February	12	29	51	82	103	113	133	90	46	
January	14	30	53	85	105	112	130	88	42	

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 72 and figures 1 to 144 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

Commonwealth of Australia, Ionospheric Prediction Service of the Commonwealth Observatory:
- Brisbane, Australia
- Canberra, Australia
- Hobart, Tasmania
- Townsville, Australia

Australian Department of Supply and Shipping, Bureau of Mineral Resources, Geology and Geophysics:
- Watheroo, Western Australia

University of Graz:
- Graz, Austria

Meteorological Service of the Belgian Congo and Ruanda-Urundi:
Leopoldville, Belgian Congo

British Department of Scientific and Industrial Research, Radio Research Board:
Falkland Is.
Ibadan, Nigeria
Inverness, Scotland
Port Lockroy
Singapore, British Malaya
Slough, England

Defence Research Board, Canada:
Baker Lake, Canada
Churchill, Canada
Fort Chimo, Canada
Ottawa, Canada
Resolute Bay, Canada
St. John's, Newfoundland

Radio Wave Research Laboratories, National Taiwan University, Taipeh, Formosa, China:
Formosa, China

French Ministry of National Defense (Section for Scientific Research):
Dakar, French West Africa
Djibouti, French Somaliland
Fribourg, Germany

Institute for Ionospheric Research, Lindau Uber Northeim, Hannover, Germany:
Lindau/Harz, Germany

The Royal Netherlands Meteorological Institute:
De Bilt, Holland

Icelandic Post and Telegraph Administration:
Reykjavik, Iceland

All India Radio (Government of India), New Delhi, India:
Bombay, India
Delhi, India
Madras, India
Tiruchy, India

Ministry of Postal Services, Radio Research Laboratories, Tokyo, Japan:
Akita, Japan
Tokyo (Kokubunji), Japan
Wakkanai, Japan
Yamagawa, Japan

Christchurch Geophysical Observatory, New Zealand Department of Scientific and Industrial Research:
- Christchurch, New Zealand
- Rarotonga I.

South African Council for Scientific and Industrial Research:
- Capetown, Union of South Africa
- Johannesburg, Union of South Africa

Research Institute of National Defence, Stockholm, Sweden:
- Upsala, Sweden

United States Army Signal Corps:
- Adak, Alaska
- Okinawa I.
- White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):
- Anchorage, Alaska
- Fairbanks, Alaska (Geophysical Institute of the University of Alaska)
- Guam I.
- Huancayo, Peru (Instituto Geofisico de Huancayo)
- Maui, Hawaii
- Narsarssuak, Greenland
- Panama Canal Zone
- Point Barrow, Alaska
- Puerto Rico, W. I.
- Washington, D. C.

HOURLY IONOSPHERIC DATA AT WASHINGTON, D. C.

The data given in tables 73 through 84 follow the scaling practices given in the report IRPL-C61, "Report of International Radio Propagation Conference," pages 36 to 39, and the median values are determined by the conventions given above under "Symbols, Terminology, Conventions." Beginning with September 1949, the data are taken at Ft. Belvoir, Virginia.

IONOSPHERIC STORMINESS AT WASHINGTON, D.C.

Table 85 presents ionosphere character figures for Washington, D. C. during October 1954, as determined by the criteria given in the report IRPL-R5, "Criteria for Ionospheric Storminess," together with Cheltenham, Maryland, geomagnetic K-figures, which are usually covariant with them.

RADIO PROPAGATION QUALITY FIGURES

Tables 87a and 87b give for September 1954 the radio propagation quality figures for the North Atlantic area, the relevant CRPL advance and short-term forecasts, a summary geomagnetic activity index and sundry comparisons, specifically as follows:

(a) radio propagation quality figures, Qa, separately for each 6-hour interval of the Greenwich day, viz., 00-06, 06-12, 12-18, 18-24 hours UT (Universal Time or GCT).
(b) whole-day radio quality indices (beginning October 1952). Each index is a weighted average of the four quarter-day Qa-figures, before rounding off, with half weight given to quality grades 5 and 6. This procedure tends to give whole-day indices suitable for comparison with whole-day advance forecasts which designate whenever possible the days when significant disturbance or unusually quiet conditions will occur.
(c) short-term forecasts, issued by CRPL every six hours (nominally one hour before 00^h, 06^h, 12^h, 18^h UT) and applicable to the period 1 to 13 (especially 1 to 7) hours ahead. Note that new scoring rules have been adopted beginning with October 1952 data.
(d) advance forecasts, issued semiweekly (CRPL-J reports) and applicable 1 to 3 or 4 days ahead, 4 or 5 to 7 days ahead, and 8 to 25 days ahead. These forecasts are scored against the whole-day quality indices.
(e) half-day averages of the geomagnetic K indices measured by the Cheltenham Magnetic Observatory of the U. S. Coast and Geodetic Survey.
(f) illustration of the comparison of short-term forecasts with Qa-figures and also with estimates of radio quality based on CRPL observations only.
(g) illustration of the outcome of advance forecasts (1 to 3 or 4 days ahead) and, for comparison, the outcome of a type of "blind" forecast. For the latter the frequency for each quality grade, as determined from the distribution of quality grades in the four most recent months of the current season, is partitioned among the grades observed in the current month in proportion to the frequencies observed in the current month.

These radio propagation quality figures, Qa, are prepared from radio traffic data reported to CRPL by American Telephone and Telegraph Company, Mackay Radio and Telegraph Company, RCA Communications, Inc., Marconi Company, British Admiralty Signal and Radar Establishment, and the following agencies of the U. S. Government:--Coast Guard, Navy, Army Signal Corps, and U. S. Information Agency. The method of calculation, summarized below, is similar to that described in a 1946 report, IRPL-R31, now out of print. Only reports of radio transmission on North Atlantic paths closely approximating New York-London are included in the estimation of quality.

The original reports are submitted on various scales and for various time intervals. The observations for each 6-hour interval are averaged on the quality scale of the original reports. These 6-hour indices are then adjusted to the 1 to 9 quality-figure scale by a conversion table prepared by comparing the distribution of these indices for at least four months, usually a year, with a master distribution determined from analysis of the reports originally made on the 1 to 9 quality-figure scale. A report whose distribution is the same as the master is thereby converted linearly to the Q-figure scale. The 6-hourly quality figures are (subjectively) weighted means of the reports received for that period. These 6-hourly quality figures replace, beginning January 1953, the half-daily quality figures which formerly appeared in this table. (These forecasts and quality indices are prepared by the North Atlantic Radio Warning Service, the CRPL forecasting center at Ft. Belvoir, Virginia.)

Table 86 gives for September 1954, the radio propagation quality figures for the North Pacific area, the relevant CRPL advance and short-term forecasts, and sundry comparisons, specifically as follows:

(a) radio propagation quality figures, Qp, separately for each of three 9-hour intervals of the Greenwich day, viz., 03-12, 09-18 and 18-03 UT (Universal Time or GCT).
(b) whole-day radio quality indices for each Greenwich day. These are derived from the same basic data as the 9-hour indices, separately reduced.
(c) short-term forecasts, issued daily at 02, 09 and 18 hours UT.
(d) advance forecasts, issued semiweekly (CRPL-Jp reports) and applicable 1 to 3 or 4 days ahead, 4 or 5 to 7 days ahead, and 8 to 25 days ahead. These forecasts are scored against the whole day quality indices.

These radio quality indices, Qp, refer to radio propagation on optimum frequencies over moderately long transmission paths in the North Pacific area. Typical paths are Anchorage (Alaska) to Seattle, or Anchorage to Tokyo. The indices are derived from reports submitted regularly by communications agencies of the U. S. Army and Air Force, and by Aeronautical Radio, Inc. The method of derivation of Qp differs from that of Qa. For data prior to June 1954, the reported quality ratings were reduced to a Q-scale with assumed mean and standard deviation for each of the periods of the day; the Qp published was the average converted rating for each date. Beginning with the data for June 1954 a ranking method has been used with the Q-scale bound statistically to magnetic character figures, as follows:

The original reports from the various contributors are used only to rank the days of the month in order of degree of disturbance. The numerical value of Qp assigned to each day is taken from a table which gives the Qp that corresponds in a statistical sense to the magnetic activity observed during the month, it being assumed that the one-month sample is large enough that the distribution of quiet and disturbance will be the same for magnetic and radio quality indices. This table comes from equating the expected distributions of magnetic activity indices and Qp (for the former, the years 1952-53 of K-Cheltenham were used; for the latter the distribution was arbitrary but strongly influenced by experience with Qa and the previous Qp). In order to avoid the statistic "average rank," the raw scores for each reporter-period are first converted to the 1-9 scale by ranking and the use of the same table. Mean quality indices for each day-period are then computed and these means ranked and converted by the table to give Qp.

The expected distributions adopted for Qp differ slightly for the different periods of the day for which quality figures are derived. For the 03-12, 18-03 and 00-24 periods 23% of the quality figures are 4 or less and for the 09-18 period 25% are. In the periods 18-03 and 00-24, indices of seven or greater are expected 25% of the time; in the 03-12 period 22% and in the 09-18 period 16%. (These forecasts and quality indices are prepared by the North Pacific Radio Warning Service, the CRPL forecasting center at Anchorage, Alaska.)

These quality figures are, in effect, a consensus of reported radio propagation conditions. The reasons for low quality are not necessarily known and may not be limited to ionospheric storminess. For instance, low quality may result from improper frequency usage for the path and time of day. Although, wherever it is reported, frequency usage is included in the rating of reports, it must often be an assumption that the reports refer to optimum working frequencies. It is more difficult to eliminate from the indices conditions of low quality because of multipath, interference, etc. These considerations should be taken into account in interpreting research correlations between the Q-figures and solar, auroral, geomagnetic or similar indices.

OBSERVATIONS OF THE SOLAR CORONA

Tables 88 through 90 give the observations of the solar corona during October 1954, obtained at Climax, Colorado, by the High Altitude Observatory of Harvard University and the University of Colorado. Tables 91 through 93 list the coronal observations obtained at Sacramento Peak, New Mexico, during October 1954, derived by Harvard College Observatory as a part of its performance of a research contract with the Upper Air Research Observatory, Geophysical Research Directorate, Air Force Cambridge Research Center. The data are listed separately for east and west limbs at 5-degree intervals of position angle north and south of the Solar Equator at the limb. The time of observation is given to the nearest tenth of a day, GCT.

Table 88 gives the intensities of the green (5303A) line of the emission spectrum of the solar corona; table 89 gives similarly the intensities of the first red (6374A) coronal line; and table 90, the intensities of the second red (6702A) coronal line; all observed at Climax in October 1954.

Table 91 gives the intensities of the green (5303A) coronal line; table 92, the intensities of the first red (6374A) coronal line; and table 93, the intensities of the second red (6702A) coronal line; all observed at Sacramento Peak in October 1954.

The following symbols are used in tables 88 through 93: a, observation of low weight for whole limb (if in date column) or for portion of limb indicated; -, corona not visible; and X, no observation for whole limb (if in date column) or for portion of limb indicated.

RELATIVE SUNSPOT NUMBERS

Table 94 lists the daily provisional Zürich relative sunspot number, R_Z, for October 1954, as communicated by the Swiss Federal Observatory. Table 95 contains the daily American relative sunspot number, R_A', for September 1954, as compiled by the Solar Division, American Association of Variable Star Observers.

OBSERVATIONS OF SOLAR FLARES

Table 96 gives the preliminary record of solar flares reported to the CRPL. These reports are communicated on a rapid schedule at the sacrifice of detailed accuracy. Definitive and complete records are published later in the Quarterly Bulletin of Solar Activity, I.A.U., in various observatory publications, and elsewhere. The present listing serves to identify and roughly describe the phenomena observed. Details should be sought from the reporting observatory.

Reporting directly to the CRPL are the following observatories: Mt. Wilson, McMath-Hulbert, U. S. Naval, Wendelstein, Kanzel and High Altitude at Sacramento Peak, New Mexico. The remainder report to Meudon (Paris) and the data are taken from the Paris-URSIgram broadcast, monitored fairly regularly by the CRPL. The data on solar flares reported from Sacramento Peak, New Mexico, communicated by the High Altitude Observatory at Boulder, Colorado, are provided by Harvard University as the result of work undertaken on an Air Materiel Command Research and Development Contract administered by the Air Force Cambridge Research Laboratories.

The table lists for each flare the reporting observatory, date, times of beginning and ending of observation, duration (when known), total area (corrected for foreshortening), and heliographic coordinates. For the maximum phase of the flare is given the time, intensity, area relative to the total area, and the importance. The column "SID observed" is to indicate when a sudden ionosphere disturbance, noted elsewhere in these reports, occurred at the time of a flare. Times are in Universal Time (GCT).

INDICES OF GEOMAGNETIC ACTIVITY

Table 97 lists various indices of geomagnetic activity based on data from magnetic observatories widely distributed throughout the world. The indices are: (1) preliminary international character-figures, C; (2) geomagnetic planetary three-hour-range indices, Kp; (3) magnetically selected quiet and disturbed days.

The C-figure is the arithmetic mean of the subjective classification by all observatories of each day's magnetic activity on a scale of 0 (quiet) to 2 (storm). The magnetically quiet and disturbed days are selected by the international scheme outlined on pages 219-227 in the December 1943 issue of Terrestrial Magnetism and Atmospheric Electricity. The details of the currently used method follow. For each day of a month, its geomagnetic activity is assigned by weighting equally the following three criteria: (1) the sum of the eight Kp's; (2) the greatest Kp; and (3) the sum of the square of the eight Kp's.

Kp is the mean standardized K-index from 11 observatories between geomagnetic latitudes 47 and 63 degrees. The scale is 0 (very quiet) to 9 (extremely disturbed), expressed in thirds of a unit, e.g., 5- is 4 2/3, 5o is 5 0/3, and 5+ is 5 1/3. This planetary index is designed to measure solar particle-radiation by its magnetic effects, specifically to meet the needs of research workers in the ionospheric field. A complete description of Kp has appeared in Bulletin 12b, "Geomagnetic Indices C and K, 1948," published in Washington, D. C., 1949, by the Association of Terrestrial Magnetism and Electricity, International Union of Geodesy and Geophysics. Kp is available from 1937 to date as noted in F108.

The Committee on Characterization of Magnetic Disturbance, ATME, IUGG, has kindly supplied this table. The Meteorological Office, De Bilt, Holland, collects the data and compiles C and selected days. The Chairman of the Committee computes the planetary index. Current tables are also published quarterly in the Journal of Geophysical Research along with data on sudden commencements (sc) and solar flare effects (sfe).

SUDDEN IONOSPHERE DISTURBANCES

Table 98 shows that no sudden ionosphere disturbances were observed at Ft. Belvoir, Virginia, during the month of October 1954.

ERRATUM

CRPL-F122, p. 15, table 20:	fEs column at 0200 should read 3.4; at 0300 should read 3.1.
p. 61, fig. 40:	See fig. A, p. 50 of this issue for revised graph.

TABLES OF IONOSPHERIC DATA

Table 1

Washington, D. C. (38.7°N, 77.1°W) — October 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	2.6						3.0
01	280	2.3						3.1
02	280	2.5						3.1
03	270	2.4						3.1
04	(270)	2.3						3.1
05	(270)	(2.2)						(3.2)
06	250	2.6					2.8	3.3
07	230	4.2	220	---	120	1.8	2.4	3.5
08	250	5.0	220	3.4	110	2.3	3.0	3.4
09	260	5.3	210	3.8	110	2.5	3.7	3.4
10	280	5.6	200	4.0	100	2.7	3.6	3.4
11	280	5.7	190	4.1	100	2.8	3.5	3.3
12	290	6.0	190	4.1	100	2.9	3.1	3.3
13	290	6.2	200	4.1	100	2.9	3.1	3.2
14	270	6.1	210	3.9	100	2.8		3.25
15	270	6.2	220	3.7	110	2.5		3.35
16	250	5.7	230	---	110	2.2		3.4
17	230	5.6	240	---	(120)	1.7	1.8	3.5
18	220	4.6						3.4
19	230	3.8						3.3
20	250	3.2						3.2
21	270	2.8						3.1
22	280	2.8						3.1
23	280	2.7						3.05

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 2

Fairbanks, Alaska (64.9°N, 147.8°W) — September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(350)	(2.1)					6.4	(2.9)
01	---	---					6.0	---
02	---	---					7.0	---
03	---	---					6.8	---
04	(380)	(2.0)					7.0	(2.75)
05	(330)	(2.4)	---	---	---	---	6.0	(2.9)
06	G	<2.8	250	2.8	---	---	4.4	G
07	G	<3.2	250	3.1	110	(2.0)	3.8	G
08	G	<3.3	230	3.3	110	(2.2)	3.8	G
09	G	<3.5	220	3.4	110	(2.4)	3.0	G
10	G	<3.5	210	3.5	110	2.5	2.0	G
11	(500)	(3.7)	210	3.6	110	2.6	2.8	(2.6)
12	(550)	(3.8)	220	3.6	110	(2.5)	2.3	(2.6)
13	(450)	3.9	230	3.6	110	2.5	2.2	2.7
14	(430)	4.0	220	3.6	110	2.4		3.0
15	370	3.8	230	3.5	120	2.2		3.2
16	(340)	3.8	230	---	120	(1.9)	2.7	3.25
17	260	3.6	230	---	120	(1.6)		3.25
18	250	3.4	---	---	---	---	1.5	3.3
19	280	3.0					3.2	3.1
20	310	(2.2)					5.0	(3.0)
21	310	(1.9)					4.9	(2.85)
22	(340)	(2.1)					5.6	(2.9)
23	(340)	(2.0)					6.8	---

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 3

Upsala, Sweden (59.8°N, 17.6°E) — September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	(2.0)						(2.9)
01	330	(1.9)					2.2	(2.9)
02	340	(1.7)					2.0	2.9
03	335	(1.6)					2.2	(2.9)
04	345	(1.5)			---	---	2.2	2.9
05	280	2.0			---	E		3.0
06	250	2.9	230	2.6	---	1.5	2.0	3.3
07	G	3.5	225	3.2	130	1.8	2.1	3.2
08	405	3.8	215	3.5	120	2.2	2.3	3.1
09	390	4.0	210	3.6	115	2.3	3.3	3.0
10	350	4.4	200	3.8	110	2.5	3.8	3.1
11	320	4.6	200	3.8	110	2.6	3.4	3.2
12	340	4.4	200	3.9	110	2.6	3.1	3.15
13	325	4.4	200	3.8	110	2.5	2.8	3.1
14	310	4.4	220	3.8	110	2.4	3.0	3.2
15	290	4.2	215	3.6	110	2.3	2.6	3.25
16	275	4.2	235	3.3	115	2.1	2.2	3.25
17	275	4.2	245	(3.1)	130	1.8	2.2	3.2
18	255	4.2	245	2.5	---	E	2.8	3.1
19	250	4.1			---	E	3.0	3.1
20	250	3.7					2.2	3.1
21	250	(3.1)						(3.1)
22	280	(2.5)						(3.0)
23	305	(2.0)						2.9

Time: 15.0°E.
Sweep: 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 4

Adak, Alaska (51.9°N, 176.6°W) — September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	2.4					2.0	3.05
01	280	2.4					2.2	3.0
02	280	2.4					2.0	3.0
03	280	2.5					2.2	3.0
04	280	2.4					2.8	3.0
05	270	2.4	---	---	---	---	2.9	3.1
06	280	3.2	230	2.8	120	1.6	2.6	3.2
07	360	3.8	230	3.3	110	2.0	4.4	3.1
08	380	4.1	220	3.5	110	2.3	2.7	3.0
09	390	4.2	210	3.8	110	2.6	5.0	3.0
10	400	4.2	210	3.9	110	2.7	2.7	3.0
11	410	4.3	200	3.9	110	2.8	2.6	2.8
12	370	4.4	200	3.9	110	2.8		3.1
13	340	4.3	200	3.9	110	2.7	3.0	3.2
14	340	4.3	210	3.8	110	2.6	2.8	3.2
15	310	4.2	220	3.8	110	2.5	2.2	3.3
16	270	4.1	230	3.6	110	2.2	1.5	3.3
17	240	4.1	240	---	120	1.8	2.2	3.4
18	240	3.9			130	1.6	2.7	3.3
19	250	3.8					3.3	3.2
20	260	3.6					3.2	3.1
21	250	3.2					2.7	3.1
22	240	3.1					2.6	3.2
23	250	2.7					2.6	3.2

Time: 180.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 5

White Sands, New Mexico (32.3°N, 106.5°W) — September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.1						3.1
01	260	3.2						3.2
02	250	3.1						3.2
03	240	3.2						3.3
04	230	2.9						3.3
05	240	2.8						3.3
06	230	3.5			---	---		3.4
07	260	4.7	220	3.4	110	(2.0)	2.5	3.4
08	250	5.2	200	3.8	110	2.5	2.8	3.5
09	280	5.4	200	4.0	(110)	(2.8)	3.4	3.45
10	300	5.4	190	4.1	110	3.0	2.8	3.2
11	340	5.4	190	4.2	110	3.1	2.8	3.1
12	320	5.8	200	4.2	110	3.2	2.7	3.1
13	300	6.2	200	4.2	110	3.1	2.8	3.2
14	290	6.4	210	4.1	110	3.0	2.6	3.3
15	280	6.2	210	4.0	110	2.8	2.3	3.3
16	260	6.0	220	3.8	110	2.5	2.6	3.4
17	250	5.8	220	(3.4)	110	2.0	3.2	3.5
18	210	5.2	---	---			2.6	3.6
19	200	4.4						3.5
20	220	3.6						3.4
21	(240)	3.2						3.2
22	240	3.1						3.2
23	250	3.1						3.2

Time: 105.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 6

Okinawa I. (26.3°N, 127.8°E) — September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	(3.2)					1.9	(3.0)
01	260	3.2					1.9	(3.1)
02	240	(3.1)						3.1
03	240	(2.8)						(3.2)
04	240	2.5						(3.15)
05	(240)	2.4					2.1	(3.2)
06	240	4.2	---	---	---	---	2.2	3.45
07	230	5.7	230	---	---	---	3.4	3.6
08	250	5.7	220	---	(110)	---	4.0	3.55
09	290	5.6	210	(4.1)	110	---	4.4	3.3
10	310	6.0	200	(4.3)	---	---	4.2	3.15
11	330	7.2	200	4.4	---	---	3.7	3.0
12	320	8.0	200	4.3	---	---	4.2	3.0
13	310	8.6	210	4.3	(110)	---	3.1	3.1
14	290	8.8	220	(4.2)	(110)	---	3.1	3.1
15	300	7.6	230	(4.1)	110	2.9	3.4	3.1
16	280	7.4	240	---	110	(2.7)	3.9	3.3
17	250	7.8	240	---	110	---	3.4	3.4
18	230	7.3					3.2	3.5
19	210	(6.0)					4.0	3.4
20	(220)	4.4					4.6	(3.1)
21	(270)	4.0					4.4	(2.85)
22	(300)	3.9					3.6	(2.9)
23	300	3.8					3.1	(2.9)

Time: 127.5°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 7

Maui, Hawaii (20.8°N, 156.5°W) September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEe	(M3000)F2
00	320	3.3					2.4	2.85
01	300	3.3					2.3	3.0
02	280	3.4					1.8	3.1
03	260	3.0					1.6	3.2
04	270	2.4					1.6	3.0
05	300	2.2						2.9
06	290	2.6						3.0
07	280	5.2	260	---	130	2.0	3.0	3.2
08	290	5.7	240	3.9	120	2.5	5.0	3.2
09	350	5.9	230	4.2	120	2.9	5.2	2.9
10	380	6.8	230	4.4	120	3.1	5.6	2.6
11	420	7.8	210	4.5	110	3.3	5.7	2.55
12	390	8.9	220	4.4	120	3.3	5.6	2.7
13	360	9.2	230	4.4	120	3.3	4.8	2.75
14	360	9.4	230	4.3	120	3.2	4.3	2.8
15	340	10.0	240	4.2	(120)	3.0	4.6	2.9
16	300	10.7	240	4.0	120	2.8	4.4	3.1
17	260	10.4	250	3.7	120	2.3	4.4	3.3
18	240	8.2	260	---	---	---	4.0	3.5
19	240	5.3					4.4	3.4
20	260	3.8					4.0	2.9
21	310	3.4					3.7	2.8
22	330	3.4					2.6	2.7
23	320	3.4					2.6	2.8

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 eeconde.

Table 8

Puerto Rico, W. I. (18.5°N, 67.2°W) September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.2						2.95
01	280	3.4						3.0
02	270	3.4						3.1
03	240	3.3						3.2
04	250	2.8						3.2
05	260	2.8						3.2
06	240	2.9						3.3
07	230	4.7	220	---	120	1.9		3.6
08	240	5.2	220	3.6	110	2.4	2.8	3.6
09	290	5.1	200	4.1	110	2.8	2.6	3.3
10	320	5.6	200	4.3	110	3.1	2.9	3.1
11	340	6.0	200	4.3	110	3.2	2.7	3.0
12	320	7.1	200	4.3	110	3.3		3.0
13	310	8.2	210	4.3	110	3.3		3.0
14	310	8.4	210	4.3	110	3.2		3.0
15	300	8.4	230	4.2	110	3.1	2.4	3.1
16	270	9.0	230	4.0	110	2.8	3.6	3.2
17	250	8.6	230	3.7	110	2.4	3.5	3.4
18	230	8.0	220	---	---	---	2.7	3.55
19	210	5.9					2.4	3.5
20	240	4.0					2.6	3.15
21	280	3.3					2.3	3.0
22	300	3.1						3.0
23	300	3.1						3.0

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconde.

Table 9

Guam I. (13.6°N, 144.9°E) September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEe	(M3000)F2
00	290	3.3					2.0	3.0
01	280	3.2					2.2	3.1
02	240	3.0					1.6	3.4
03	240	2.0						3.4
04	280	1.7						3.4
05	280	1.5						3.4
06	250	2.6					1.6	3.2
07	240	5.2	220	---	110	1.8	2.7	3.5
08	280	6.2	210	3.9	110	2.5	3.4	3.25
09	320	7.0	200	4.1	110	2.9	4.0	2.9
10	360	7.5	200	4.2	110	3.1	4.0	2.7
11	360	7.6	190	4.3	110	3.2	4.2	2.65
12	360	7.7	200	4.3	(110)	(3.2)	4.4	2.65
13	350	8.3	200	4.3	110	3.2	3.6	2.8
14	320	8.8	210	4.3	110	3.2	4.0	3.0
15	300	9.2	220	4.2	110	3.0	4.4	3.1
16	290	9.8	220	4.0	110	2.8	4.5	3.3
17	270	9.4	220	3.7	110	2.3	4.5	3.3
18	250	8.8	240	---	(120)	(1.4)	3.6	3.3
19	240	8.4					2.8	3.3
20	230	6.8					2.2	3.3
21	230	6.1					2.5	3.3
22	240	5.0					2.3	3.3
23	260	3.9					2.4	3.0

Time: 150.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 10

Panama Canal Zone (9.4°N, 79.9°W) September 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.5						3.1
01	240	3.5					2.0	3.35
02	230	3.4					1.8	3.6
03	240	2.5					1.8	3.15
04	260	2.4						3.1
05	260	2.5					2.2	3.2
06	260	2.8					3.0	3.2
07	240	4.8	230	---	120	2.0	3.6	3.45
08	300	5.2	210	4.1	110	2.6	3.9	3.2
09	370	5.6	220	4.2	110	3.0	4.2	2.95
10	380	6.9	200	4.3	110	3.2	4.2	2.7
11	390	8.1	220	4.4	110	3.4	4.3	2.7
12	360	9.2	220	4.4	110	3.4	4.4	2.8
13	360	10.2	220	4.4	110	3.4	4.4	2.9
14	340	11.0	220	4.3	110	3.3	4.7	2.9
15	310	12.0	230	4.2	110	3.1	4.6	3.1
16	280	12.2	230	4.0	110	2.8	4.6	3.3
17	250	11.6	230	3.7	120	(2.3)	4.2	3.4
18	220	9.2	---	---	---	---	3.1	3.5
19	220	5.8					2.8	3.2
20	230	4.8					2.3	3.2
21	260	3.8						3.0
22	290	3.6						2.9
23	300	3.4						2.9

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 eeconde.

Table 11

Fairbanks, Alaska (64.9°N, 147.8°W) August 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEe	(M3000)F2
00	320	(2.5)					4.5	(2.9)
01	320	(2.7)					5.7	(2.95)
02	300	2.8					5.4	3.1
03	320	(2.9)					5.8	(3.05)
04	310	3.0	---	---	---	---	5.2	3.0
05	390	(3.2)	250	2.9	120	(1.6)	4.6	(2.8)
06	480	(3.5)	220	3.2	120	(2.0)	5.0	(2.65)
07	(500)	(3.6)	220	3.4	110	(2.3)	4.5	(2.5)
08	(510)	(3.7)	200	3.5	110	(2.5)	4.0	(2.6)
09	G	(3.7)	200	3.6	110	(2.6)	4.2	G
10	G	(3.7)	200	3.7	100	(2.6)	4.0	G
11	(520)	(4.0)	200	3.8	100	(2.7)	4.0	(2.5)
12	(530)	(4.0)	190	3.8	100	(2.8)	4.4	(2.55)
13	(520)	(4.0)	200	3.8	110	(2.7)	4.0	(2.4)
14	(520)	(4.0)	210	3.7	100	2.6	4.0	(2.5)
15	480	(4.0)	210	3.7	110	(2.5)	4.0	(2.6)
16	(400)	4.0	210	3.6	110	2.4	3.6	2.9
17	(340)	3.9	220	(3.5)	110	(2.2)	2.6	3.1
18	300	3.9	< 230	(3.2)	120	(2.0)	2.5	3.2
19	260	3.8	240	---	120	(1.6)	4.0	3.3
20	270	3.2	240	---	---	---	5.2	3.25
21	290	(2.9)			---	---	4.2	(3.1)
22	310	(2.8)					4.6	(3.0)
23	310	(2.5)					5.6	(3.0)

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 eeconds.

Table 12

Reykjavik, Iceland (64.1°N, 21.8°W) August 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					4.2	---
01	---	---					4.5	---
02	---	---			---	---	4.5	---
03	---	---			---	---	4.2	---
04	---	(2.7)	---	---	---	---	3.8	---
05	G	<3.0	260	3.0	---	---		G
06	G	<3.2	230	3.1	---	---		G
07	G	<3.3	230	3.2	---	---		G
08	420	3.7	230	3.5	---	---		3.0
09	G	<3.7	220	3.6	---	---		2.8
10	G	<3.9	220	3.8	---	---		G
11	420	(4.0)	210	3.8	---	---		2.95
12	420	4.2	200	3.8	(110)	---		2.8
13	420	4.2	210	3.8	---	---		3.0
14	400	4.2	220	3.8	(110)	---		3.0
15	400	4.2	220	3.7	(110)	---		2.95
16	380	4.2	230	3.6	(110)	(2.5)		3.0
17	390	4.1	230	3.6	110	---		3.1
18	330	4.0	230	3.4	110	---	3.0	3.25
19	310	3.8	240	---	120	---	2.9	3.3
20	300	(3.8)	---	---	---	---	3.5	(3.25)
21	(280)	(3.5)			---	---	3.8	(3.25)
22	---	---			---	---	4.2	---
23	---	---			---	---	4.4	---

Time: 15.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 18 seconde.

Table 13

Anchorage, Alaska (61.2°N, 149.9°W) — August 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	(1.9)						(3.0)
01	< 300	(2.0)					2.7	(3.05)
02	330	(1.8)					3.2	(2.9)
03	< 310	(1.9)					2.8	(3.0)
04	300	(2.4)	---	---			2.8	(3.1)
05	(560)	(2.9)	250	2.8	120	1.6	2.7	(2.5)
06	560	3.3	220	3.1	120	(1.9)	2.3	2.5
07	(720)	(3.5)	210	3.3	110	2.3	2.6	(2.1)
08	G	(3.6)	200	3.5	110	2.4	2.6	G
09	0	(3.7)	200	3.6	110	2.6	2.8	G
10	530	3.9	200	3.7	110	2.7	2.8	2.6
11	560	4.0	200	3.8	100	2.7	3.0	2.5
12	G	(3.9)	190	3.9	100	2.8	2.7	G
13	(690)	(4.0)	200	3.8	100	2.8		(2.25)
14	(640)	3.9	200	3.8	100	2.7		2.3
15	520	3.9	210	3.7	110	2.6		2.6
16	440	3.9	220	3.6	110	2.4		2.85
17	420	3.8	220	3.5	110	2.2		3.0
18	300	3.9	230	(3.3)	120	(2.0)	2.3	3.2
19	260	3.8	230	---	130	(1.7)	2.8	3.2
20	250	3.6	---	---	---	---	2.4	3.2
21	250	3.3					3.0	3.1
22	250	(3.0)						(3.2)
23	260	(2.4)						(3.2)

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 14

Narsarssuak, Greenland (61.2°N, 45.4°W) — August 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(300)	(2.6)					5.3	(3.3)
01	(320)	(2.6)					5.0	---
02	---	---					5.0	---
03	---	---					5.2	---
04	---	---	---	---	---	---	4.8	---
05	(320)	(3.2)	---	---	---	---	4.7	(3.25)
06	(340)	(3.2)	230	3.2	110	2.1	3.3	(3.2)
07	(460)	(3.5)	220	3.3	100	2.4	3.2	(2.7)
08	(480)	(3.8)	220	3.5	100	2.5		(2.8)
09	(560)	(3.8)	210	3.7	100	2.7		(2.5)
10	450	4.0	210	3.8	100	2.8		2.9
11	440	(4.0)	210	3.8	100	2.9		2.9
12	440	4.1	210	3.8	100	2.8		2.95
13	520	(4.0)	210	3.8	100	2.8		(2.7)
14	420	4.2	210	3.8	100	2.7		3.0
15	420	4.2	210	3.7	100	2.6		3.0
16	410	4.0	220	3.5	110	2.5	3.1	3.1
17	350	4.0	220	3.5	110	2.4	3.5	3.1
18	320	3.8	240	3.3	110	2.3	4.0	3.3
19	300	(3.8)			120	2.2	4.8	3.35
20	290	(3.4)			120	(1.7)	6.3	(3.4)
21	270	(3.2)			---	---	6.6	(3.5)
22	(250)	(2.9)					6.4	(3.35)
23	(300)	(2.8)					6.8	(3.2)

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 15

Adak, Alaska (51.9°N, 176.6°W) — August 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.2					2.6	3.1
01	250	3.1					2.6	3.2
02	260	2.9					2.3	3.1
03	270	2.9					2.2	3.1
04	270	2.9	---	---	---	---	2.5	3.0
05	350	3.1	250	2.7	120	1.6	2.2	2.9
06	410	3.6	230	3.1	120	1.9	3.5	2.8
07	410	4.0	230	3.4	110	2.3	4.1	2.9
08	430	4.1	210	3.7	110	2.6	5.1	2.8
09	440	4.2	210	3.8	110	2.7	5.3	2.8
10	450	4.3	200	3.9	110	2.8	6.3	2.8
11	460	4.3	200	4.0	110	2.8	4.5	2.7
12	500	4.2	200	4.0	110	2.9	4.7	2.7
13	530	4.2	200	4.0	100	2.9	3.9	2.6
14	480	4.2	200	4.0	110	2.8	4.1	2.7
15	430	4.2	210	3.9	110	2.7	4.9	2.8
16	410	4.1	220	3.7	110	2.6	5.3	2.9
17	350	4.0	220	3.5	110	2.2	4.1	3.1
18	300	4.1	240	3.2	120	1.7	4.0	3.2
19	260	4.3	---	---	---	---	4.2	3.2
20	260	4.8					3.4	3.1
21	250	4.5					3.6	3.1
22	250	4.2					3.5	3.2
23	250	3.5					2.8	3.1

Time: 180.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 16

White Sands, New Mexico (32.3°N, 106.5°W) — August 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.3					2.2	3.3
01	240	3.1					2.4	3.2
02	250	3.1						3.2
03	240	3.0						3.2
04	230	2.9					1.9	3.3
05	240	2.8					2.2	3.4
06	240	3.6	210	---	120	---	2.7	3.4
07	310	4.4	200	3.6	110	(2.2)	3.7	3.3
08	300	4.9	200	3.8	100	2.6	4.5	3.3
09	320	4.9	190	4.0	100	(2.9)	4.5	3.2
10	380	4.9	180	4.2	100	3.1	4.8	3.0
11	340	5.2	180	4.2	100	(3.2)	4.1	3.1
12	360	5.2	190	4.2	100	(3.3)	4.1	3.0
13	340	5.3	200	4.2	100	3.2	3.9	3.0
14	330	5.5	200	4.1	100	3.2	3.8	3.1
15	310	5.5	200	4.0	100	3.0	4.2	3.2
16	300	5.4	200	3.9	110	(2.8)	4.0	3.3
17	270	5.4	210	3.6	110	2.4	4.0	3.4
18	250	5.4	210	3.3	110	---	3.8	3.4
19	220	5.6					3.0	3.3
20	210	5.4					2.3	3.45
21	220	4.3					2.6	3.4
22	230	3.6					2.7	3.3
23	<240	3.3						3.3

Time: 105.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 17

Point Barrow, Alaska (71.3°N, 156.8°W) — July 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.5	---	---	110	1.3	6.6	3.3
01	270	3.5	220	2.2	110	1.4	6.2	3.3
02	(260)	3.5	220	2.2	110	(1.5)	5.8	3.3
03	(280)	3.5	220	2.8	110	1.5	6.0	3.4
04	(310)	3.6	220	3.0	100	1.6	4.6	3.3
05	320	3.8	220	3.3	100	1.8	4.8	3.2
06	(420)	3.8	210	3.4	100	2.1	4.5	2.8
07	(440)	(3.8)	220	3.5	100	(2.3)	4.5	2.75
08	500	< 3.9	210	3.6	100	2.4	4.5	2.6
09	G	< 3.8	220	3.7	100	2.5	4.0	G
10	G	< 3.8	210	3.7	100	2.6	3.4	G
11	G	< 3.8	200	3.8	100	2.7	3.3	G
12	660	(3.9)	200	3.8	100	(2.7)	3.2	2.2
13	560	4.0	210	3.8	100	(2.7)	3.0	2.4
14	520	4.0	210	3.8	100	2.6	2.8	2.5
15	480	4.0	210	3.8	100	2.6	2.9	2.7
16	430	4.1	210	3.7	100	2.5	3.0	2.8
17	420	4.0	210	3.7	100	2.4	2.9	2.85
18	390	4.0	220	3.5	100	2.3	3.7	2.9
19	360	3.9	220	3.4	110	2.1	3.4	3.0
20	340	3.7	240	3.3	110	2.0	4.0	3.1
21	320	3.6	240	3.0	110	1.6	4.2	3.2
22	300	3.6	---	---	110	---	4.4	3.2
23	300	3.5			110	1.3	5.4	3.25

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 18

Reykjavik, Iceland (64.1°N, 21.8°W) — July 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(270)	---					(4.6)	---
01	(260)	(3.8)					4.7	---
02	(280)	(3.1)	---	---	---	---	4.2	---
03	(300)	3.1	---	---	---	---	4.2	(3.2)
04	(330)	(3.1)	240	---	100	---	3.9	(3.0)
05	0	3.3	230	3.1	110	1.8	1.8	2.8
06	G	(3.4)	220	3.3	100	2.1		G
07	(450)	(3.7)	220	3.5	100	2.3		(2.7)
08	460	3.8	210	3.6	100	2.5	2.8	2.7
09	G	(3.8)	200	3.6	100	2.7		G
10	530	(4.0)	200	3.8	100	(2.7)		2.6
11	440	4.1	200	3.9	100	---	2.9	2.9
12	440	4.2	200	3.9	100	---		2.8
13	420	4.2	200	3.9	100	(2.9)	3.1	2.9
14	440	4.2	200	3.8	100	---		2.8
15	430	4.2	210	3.8	100	(2.8)		2.9
16	400	4.2	210	3.7	100	(2.7)		3.0
17	380	4.2	210	3.6	100	2.6	3.5	3.0
18	350	4.1	230	3.5	110	2.4	3.7	3.2
19	320	4.1	230	3.4	110	2.2	2.6	3.3
20	310	(3.9)	240	---	120	1.9	3.6	3.2
21	290	(3.8)	---	---	120	---	3.8	(3.2)
22	280	(3.6)			---	---	4.0	(3.3)
23	(270)	(4.0)			---	---	4.5	---

Time: 15.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

Table 19

Narsarssuak, Greenland (61.2°N, 45.4°W) July 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(280)	(3.2)					5.0	(3.3)
01	(320)	(3.0)					4.7	(3.2)
02	(310)	(3.2)					4.4	(3.3)
03	---	---					4.8	---
04	---	(3.4)			---	---	4.9	---
05	G	(3.2)	240	3.2	---	---	4.8	G
06	(400)	(3.5)	220	3.4	110	2.1	4.3	2.9
07	(460)	(3.6)	200	3.5	100	2.4	3.8	(2.6)
08	470	3.8	210	3.7	110	2.7		2.8
09	G	(3.8)	210	3.8	100	2.7	2.9	G
10	420	(4.1)	210	3.8	100	2.8		2.9
11	440	4.2	210	3.9	110	2.9	2.9	3.0
12	(490)	(3.9)	210	3.9	110	(3.0)	3.0	(2.5)
13	430	4.1	210	3.9	110	2.9		2.95
14	450	4.1	210	3.9	100	2.8		2.9
15	420	4.2	210	3.8	110	2.8		3.0
16	400	4.0	220	3.7	100	2.6	3.2	3.0
17	380	4.1	220	3.5	110	2.4	4.0	3.1
18	350	4.1	240	3.4	120	2.3	4.2	3.2
19	310	3.9	240	3.2	120	2.1	4.1	3.3
20	270	3.9	---	---	120	(1.7)	4.4	3.4
21	250	(3.5)			---	---	5.4	(3.5)
22	(270)	(3.2)					5.6	(3.4)
23	270	(3.3)					5.0	(3.4)

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 20

Panama Canal Zone (9.4°N, 79.9°W) July 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	4.1					2.2	3.1
01	260	3.4						3.15
02	270	3.1					1.8	3.1
03	260	2.8					2.2	3.15
04	260	2.8					2.3	3.1
05	240	2.7					1.9	3.3
06	260	2.8					3.6	3.3
07	280	4.1	220	3.5	120	2.1	4.1	3.3
08	330	4.7	220	3.9	120	(2.6)	3.9	3.2
09	450	4.7	220	4.0	110	(2.9)	4.0	2.7
10	480	4.8	220	4.1	110	3.2	4.4	2.6
11	460	5.6	210	4.1	110	3.3	4.2	2.6
12	420	6.5	220	4.2	110	3.3	4.5	2.7
13	400	7.3	220	4.2	110	3.3	4.6	2.7
14	370	8.0	220	4.1	110	3.3	4.5	2.8
15	350	8.5	220	4.0	110	3.1	4.9	2.9
16	<310	9.0	220	3.8	110	2.9	4.8	3.0
17	300	9.0	220	3.7	110	(2.6)	3.8	3.1
18	270	8.7	230	3.1	130	2.0	3.7	3.1
19	230	7.4					4.1	3.4
20	240	5.7					3.0	3.2
21	250	4.9					2.5	3.1
22	270	4.3					2.0	3.1
23	280	4.1					2.0	3.0

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 21

Resolute Bay, Canada (74.7°N, 94.9°W) June 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.9	220	3.0	(120)	1.9		3.4
01	270	3.9	210	3.0	110	1.9		3.4
02	270	3.9	210	3.0	110	1.9		3.4
03	290	3.9	210	3.0	110	2.0		3.3
04	310	3.8	210	3.2	110	2.0		3.3
05	320	3.9	210	3.3	100	2.1		3.2
06	340	4.0	210	3.4	100	2.3		3.2
07	350	4.2	210	3.5	100	2.6		3.15
08	340	4.1	200	3.7	100	2.7		3.2
09	380	4.1	200	3.8	100	2.8		3.1
10	370	4.4	200	3.8	100	2.9		3.1
11	370	4.4	200	3.8	100	2.9		3.0
12	370	4.4	200	3.9	100	2.9		3.0
13	370	4.3	200	3.9	100	2.9		3.0
14	390	4.4	200	3.8	100	2.9		3.0
15	370	4.2	200	3.8	100	2.8		3.1
16	360	4.2	200	3.8	100	2.8		3.0
17	360	4.2	200	3.7	100	2.6		3.05
18	320	4.2	200	3.6	100	2.4		3.2
19	310	4.2	200	3.4	100	2.1		3.2
20	300	4.1	210	3.3	110	2.1		3.2
21	280	4.0	210	3.1	110	2.0		3.25
22	280	4.0	210	3.0	110	2.0		3.3
23	280	4.0	220	---	110	1.9		3.3

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 22

Point Barrow, Alaska (71.3°N, 156.8°W) June 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.8	210	2.2	110	1.2	6.0	3.4
01	280	3.8	220	2.3	110	1.3	6.0	3.3
02	280	3.9	210	2.5	110	(1.4)	5.8	3.35
03	280	3.9	210	2.9	110	1.6	4.5	3.4
04	(310)	3.9	210	3.2	100	(1.8)	4.4	3.3
05	350	4.1	200	3.4	110	(2.0)	4.2	3.1
06	400	4.2	220	3.6	100	2.3	4.3	2.9
07	390	4.4	220	3.7	100	2.4	4.6	2.9
08	380	4.3	200	3.7	100	2.5	4.2	2.9
09	430	4.2	200	3.7	100	2.6	3.6	2.8
10	430	4.2	200	3.8	100	2.7	3.5	2.8
11	450	4.2	200	3.8	100	2.7	3.5	2.7
12	450	4.2	200	3.9	100	2.8	3.4	2.8
13	420	4.3	200	3.9	100	2.8	3.8	2.8
14	400	4.2	200	3.9	100	2.8	3.3	2.9
15	420	4.2	200	3.8	100	(2.7)	3.0	2.9
16	390	4.3	210	3.8	100	2.6	2.8	2.95
17	380	4.3	210	3.7	100	2.4	3.1	3.0
18	340	4.3	210	3.6	100	2.4	3.6	3.1
19	340	4.1	220	3.5	110	2.2	3.5	3.1
20	300	4.0	230	3.4	110	2.0	4.0	3.3
21	320	4.0	230	3.2	110	1.8	4.0	3.2
22	300	3.8	230	2.9	110	1.6	4.2	3.3
23	290	3.7	(220)	(2.4)	---	---	4.2	3.3

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 23

Baker Lake, Canada (64.3°N, 96.0°W) June 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	220	3.6			---	1.2	4.2	3.4
01	220	3.5			100	1.2	3.0	3.4
02	220	3.4			110	1.4	3.0	3.4
03	220	3.5	---	---	100	1.7	3.0	3.4
04	250	3.5	200	2.8	100	1.8	3.0	3.3
05	300	3.8	200	3.1	100	2.0		3.25
06	330	4.0	200	3.4	100	2.2		3.2
07	350	4.2	190	3.7	100	2.5		3.1
08	380	4.3	180	3.8	100	2.8		3.0
09	440	4.3	200	4.0	100	3.3		2.7
10	420	4.3	200	4.0	100	3.3		2.8
11	430	4.3	200	4.0	100	3.2		2.85
12	420	4.3	200	3.9	100	3.2		2.85
13	410	4.3	200	3.9	100	3.1		2.9
14	380	4.5	200	3.9	100	3.0		3.0
15	370	4.6	200	3.9	100	3.0		3.0
16	340	4.8	200	3.8	100	3.0		3.0
17	340	4.6	200	3.8	100	3.0		3.05
18	300	4.7	200	3.7	100	2.9	3.8	3.1
19	280	4.4	200	3.3	100	2.4	4.0	3.2
20	260	4.3	200	3.1	100	2.2	6.0	3.3
21	240	4.2	220	---	100	1.9	5.3	3.35
22	230	4.0			110	1.7	5.2	3.3
23	230	3.8			110	1.4	6.0	3.3

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 24

Churchill, Canada (58.8°N, 94.2°W) June 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.2			---	---	8.8	(3.2)
01	250	3.2			---	(1.8)	7.5	(3.3)
02	250	3.2			(120)	(1.6)	6.1	(3.25)
03	260	3.3			---	(1.8)	6.1	(3.3)
04	260	3.5	---	---	120	2.2	6.2	3.2
05	300	3.7	(250)	3.0	110	3.0	6.0	(3.1)
06	370	4.0	250	3.6	110	3.0	6.9	3.0
07	450	4.0	240	3.7	110	3.2	7.0	2.9
08	480	4.1	230	3.8	110	3.2	7.2	2.8
09	470	4.2	210	3.9	110	3.0	7.2	2.7
10	420	4.2	210	4.0	110	3.0	7.0	2.9
11	410	4.4	200	4.0	110	3.0	7.0	2.9
12	410	4.4	200	4.0	110	3.1	7.0	2.9
13	420	4.4	200	4.0	110	3.0	6.4	2.8
14	420	4.4	200	4.0	110	3.0	6.8	2.9
15	400	4.5	210	3.9	110	3.0	5.4	3.0
16	380	4.6	220	3.9	110	2.9	5.2	3.0
17	360	4.7	230	3.8	110	2.8	4.8	3.0
18	340	4.6	250	3.7	110	2.8	4.4	3.0
19	330	4.3	260	3.4	110	2.7	4.3	3.1
20	300	4.1	---	---	120	2.8	4.3	3.1
21	300	3.9			120	2.7	6.0	3.1
22	270	3.8			150	(2.2)	8.0	3.2
23	250	3.5			---	---	9.0	3.2

Time: 90.0°W.
Sweep: 0.6 Mc to 10.0 Mc in 16 seconds.

Table 25

Fort Chimo, Canada (58.1°N, 68.3°W) June 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEe	(M3000)F2
00	250	(3.2)					5.2	
01	260	3.1			---	---	5.0	
02	260	(3.2)			---	---	4.0	
03	(250)	(3.3)			100	2.8	4.2	
04	280	3.4	---	---	100	3.0	4.4	
05	(300)	3.7	250	3.3	100	3.1	4.3	---
06	340	<4.0	230	3.6	100	2.7	4.3	---
07	400	4.0	210	3.7	100	2.9	4.0	(3.15)
08	380	4.2	200	3.8	100	2.8	3.6	G
09	400	4.2	200	3.8	100	3.0	3.2	(2.95)
10	440	4.2	200	4.0	100	3.0	3.7	G
11	380	4.3	200	4.0	100	3.0		3.0
12	390	4.3	200	4.0	100	3.1	3.4	2.95
13	400	4.3	200	4.0	100	3.0		2.7
14	380	4.4	200	3.9	100	3.0		(2.9)
15	380	4.3	200	3.8	100	3.0	3.7	(2.9)
16	360	4.6	200	3.7	100	2.8		(3.0)
17	360	4.6	240	3.6	100	2.6	3.2	---
18	330	4.3	260	(3.3)	100	2.9	3.8	---
19	290	4.1	230	---	100	2.6	3.9	---
20	260	(4.0)			---	2.2	5.3	
21	220	(3.6)			---	---	6.2	
22	230	3.2					6.2	
23	230	3.2					4.8	

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 eeconde.

Table 26

St. John's, Newfoundland (47.6°N, 52.7°W) June 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEe	(M3000)F2
00	280	2.4						3.0
01	290	2.1						3.0
02	290	2.0					3.0	3.0
03	280	2.0			---	E	3.7	3.0
04	240	3.0	---	---	130	E	2.8	3.4
05	240	3.7	230	3.2	110	2.0	3.6	3.3
06	320	4.0	230	3.5	110	2.4	4.5	3.2
07	350	4.3	220	3.8	110	2.8	4.8	3.2
08	350	4.5	210	4.0	110	3.0	5.0	3.2
09	370	4.6	210	4.0	110	3.2	4.6	3.2
10	380	4.6	200	4.1	110	3.2	4.6	3.0
11	380	4.6	200	4.1	100	3.3	4.5	3.1
12	410	4.6	200	4.2	100	3.4	4.5	2.9
13	390	4.6	200	4.1	100	3.3	4.5	3.0
14	390	4.6	200	4.0	110	3.2	4.5	3.0
-15	380	4.5	210	4.0	110	3.0	4.5	3.05
16	370	4.5	220	3.8	110	2.9	4.1	3.1
17	340	4.5	230	3.6	110	2.5	4.8	3.1
18	300	4.8	250	3.3	110	2.1	4.6	3.2
19	250	5.2	250	---	120	E	4.0	3.25
20	230	5.2			---	E	4.2	3.4
21	240	4.5			---	E	2.7	3.3
22	240	3.9					1.7	3.2
23	270	3.2						3.3

Time: 60.0°W.
Sweep: 0.9 Mc to 10.0 Mc in 18 seconde.

Table 27

Graz, Austria (47.1°N, 15.5°E) June 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEe	(M3000)F2
00	260	4.0						
01	280	3.6						
02	280	3.5						
03	280	3.2						
04	290	3.2						
05	270	4.0		3.0				
06	300	4.6	225	3.6				
07	290	(5.0)		3.9		(2.6)	4.2	
08	300	5.0	200	4.0		(2.8)	4.3	
09	290	5.2	(200)	4.1		(3.0)	5.1	
10	300	5.2		4.1		3.0	5.1	
11	(290)	5.0	(200)	(4.3)		(3.1)	4.4	
12	(330)	(5.1)		(4.3)		(3.2)	4.0	
13	(300)	5.0	200	(4.2)		(3.2)	4.0	
14		(5.0)	200	4.1		(3.1)	3.9	
15		5.0	200	4.0		(3.0)	3.6	
16	335	5.0	200	4.0		(2.9)	3.4	
17	300	5.0	210	3.8			4.0	
18	300	5.0	(250)	3.5			3.9	
19	270	5.4					4.5	
20	250	6.2					4.0	
21	250	5.8					3.4	
22	250	5.3					3.8	
23	250	4.8					3.2	

Time: 15.0°E.
Sweep: 2.5 Mc to 12.0 Mc in 2 minutee.

Table 28

Ottawa, Canada (45.4°N, 75.9°W) June 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEe	(M3000)F2
00	270	2.4						3.1
01	290	2.0						3.1
02	320	1.8					2.3	3.0
03	(330)	1.8					3.0	3.0
04	270	2.1					2.7	3.15
05	240	3.1	---	---	120	1.8	2.9	3.4
06	330	3.6	220	3.3	110	2.2	3.2	3.2
07	350	4.0	210	3.6	110	2.6	3.9	3.1
08	360	4.4	210	3.8	110	2.8	4.9	3.1
09	390	4.5	200	4.0	110	3.0	4.8	3.1
10	360	4.6	200	4.1	110	3.2	4.0	3.0
11	380	4.7	200	4.1	110	3.3	4.8	3.0
12	390	4.6	200	4.2	110	3.3		2.9
13	400	4.6	200	4.1	110	3.3		2.9
14	400	4.6	200	4.0	110	3.3		2.9
15	400	4.5	200	4.0	110	3.1		2.85
16	380	4.6	220	3.8	110	3.0		3.0
17	340	4.6	230	3.7	110	2.7		3.0
18	310	4.8	230	3.4	110	2.3	4.0	3.1
19	270	5.0	240	3.0	120	1.9	4.5	3.2
20	240	5.1			---	---	4.2	3.2
21	240	4.7					3.4	3.2
22	240	3.9					2.6	3.2
23	250	3.1						3.1

Time: 75.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 15 seconde.

Table 29

Wakkanai, Japan (45.4°N, 141.7°E) June 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEe	(M3000)F2
00	260	4.5					4.5	
01	260	4.2					3.6	
02	270	4.5					3.9	
03	260	4.1					4.0	
04	260	4.2					3.7	
05	280	4.5					4.0	
06	310	4.8					5.7	
07	330	5.1					6.2	
08	320	5.2					6.5	
09	320	5.3					6.4	
10	320	5.5					6.5	
11	380	4.9					6.7	
12	400	5.0					6.1	
13	390	5.0					7.2	
14	400	4.7					6.2	
15	380	4.8					5.8	
16	340	4.9					5.6	
17	320	5.0					6.0	
18	300	5.3					5.2	
19	280	5.7					5.4	
20	260	6.0					5.7	
21	270	5.9					5.9	
22	260	5.3					6.0	
23	260	4.8					6.0	

Time: 135.0°E.
Sweep: 1.0 Mc to 22.0 Mc in 1 minute.

Table 30

Akita, Japan (39.7°N, 140.1°E) June 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	4.1					5.0	
01	270	4.0					5.1	
02	250	4.0					4.3	
03	240	3.8					4.2	
04	240	3.5					3.6	
05	250	4.0					3.8	
06	270	4.6					4.6	
07	(270)	5.2					6.9	
08	(290)	5.4					7.0	
09	(270)	5.5					7.2	
10	(300)	(5.4)					7.1	
11	---	---					7.8	
12	(380)	5.0					7.0	
13	370	5.1					6.7	
14	340	5.1					7.0	
15	330	5.2					6.0	
16	320	5.2					5.4	
17	300	5.2					5.4	
18	280	5.4					5.7	
19	240	5.8					5.7	
20	240	5.7					5.5	
21	240	5.2					4.5	
22	250	4.5					6.5	
23	270	4.5					6.1	

Time: 135.0°E.
Sweep: 0.85 Mc to 22.0 Mc in 2 minutee.

Table 31

Tokyo, Japan (35.7°N, 139.5°E) June 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	4.0					5.2	3.0
01	280	3.9					5.4	3.0
02	280	3.7					5.5	3.1
03	260	3.4					4.5	3.1
04	270	3.2					4.2	3.0
05	250	3.8	---	---	130	1.6	3.5	3.25
06	300	4.5	240	3.5	110	2.3	4.6	3.2
07	290	5.0	---	---	110	2.6	6.0	3.2
08	290	5.5	---	---	110	2.9	6.5	3.3
09	290	5.6	220	4.1	110	3.0	7.0	3.3
10	(340)	(5.1)	---	4.3	110	3.1	7.2	3.2
11	(360)	5.3	---	---	110	3.2	7.4	3.0
12	(370)	5.0	230	4.2	110	3.2	7.0	3.0
13	400	5.0	200	4.1	110	3.2	7.0	2.9
14	350	5.5	220	4.1	110	3.1	6.5	3.0
15	350	5.9	220	4.0	110	3.0	5.9	3.0
16	320	5.8	240	3.9	110	2.8	5.9	3.1
17	310	5.8	230	3.5	110	2.4	5.8	3.1
18	290	5.8	250	3.2	120	1.9	5.4	3.1
19	250	6.0					5.6	3.2
20	250	5.9					5.6	3.2
21	260	4.8					4.8	3.2
22	300	4.1					5.6	3.0
23	290	4.0					5.8	3.0

Time: 135.0°E.
Sweep: 1.0 Mc to 17.2 Mc in 2 minutee.

Table 32

Yamagawa, Japan (31.2°N, 130.6°E) June 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	---					6.0	
01	300	---					5.9	
02	270	(3.5)					5.8	
03	290	(3.3)					5.1	
04	280	(3.2)					5.0	
05	270	3.2					3.3	
06	250	4.3					3.8	
07	280	5.0					5.6	
08	290	5.2					6.2	
09	300	5.6					8.2	
10	(360)	5.2					8.2	
11	(430)	(5.1)					8.6	
12	(400)	(5.5)					8.8	
13	(400)	(5.4)					8.6	
14	370	6.4					8.3	
15	350	6.7					6.4	
16	320	7.1					6.0	
17	300	6.6					6.2	
18	290	6.1					6.0	
19	270	6.1					5.8	
20	260	6.0					5.8	
21	260	5.2					5.8	
22	300	4.6					5.9	
23	300	(4.9)					5.9	

Time: 135.0°E.
Sweep: 1.0 Mc to 22.0 Mc in 1 minute.

Table 33

Huancayo, Peru (12.0°S, 75.3°W) June 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	3.0						3.5
01	230	3.0						3.4
02	230	2.8						3.4
03	240	2.3						3.4
04	250	1.8						3.45
05	270	E			---	E		(3.4)
06	270	1.8			110	2.0		3.0
07	240	4.4	220	---	110	2.6	5.7	3.3
08	300	5.4	210	---	100	---	9.1	3.1
09	340	5.8	200	3.9	100	---	9.2	2.9
10	380	5.6	200	4.0	100	---	10.9	2.7
11	400	5.5	190	4.1	100	---	11.2	2.6
12	410	5.3	190	4.1	100	---	10.9	2.6
13	420	5.6	190	4.1	100	---	11.0	2.6
14	390	5.8	190	4.0	100	---	10.2	2.7
15	360	6.0	190	3.8	100	---	9.4	2.6
16	310	6.1	190	3.6	110	---	8.8	2.8
17	(260)	6.0	210	---	---	2.0	4.8	3.0
18	240	6.0				---		3.2
19	240	5.2						3.15
20	230	4.6						3.3
21	230	4.7						3.4
22	220	4.3						3.5
23	220	3.4						3.5

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconde.

Table 34

Watheroo, W. Auetralia (30.3°S, 115.9°E) June 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	3.2						3.3
01	240	3.6						3.3
02	240	3.7						3.3
03	240	3.6						3.4
04	240	3.6						3.4
05	220	3.5					1.9	3.4
06	220	3.0						3.45
07	220	3.5				---		3.4
08	220	4.4	---	---		1.9	1.9	3.7
09	240	4.6	230	3.5		2.4	2.7	3.6
10	260	4.8	220	3.8		2.7	2.9	3.6
11	270	5.0	230	4.0		2.8	3.4	3.5
12	280	5.0	230	4.0		2.9	3.5	3.5
13	280	5.2	220	4.0		2.9	3.5	3.5
14	270	5.1	230	3.8		2.7	3.2	3.5
15	260	5.2	220	3.7		2.6	2.9	3.5
16	240	5.1	230	3.3		2.3	3.1	3.6
17	230	4.5	---	---		---	2.8	3.6
18	220	3.5					2.7	3.5
19	230	2.8					2.3	3.3
20	240	3.0					1.9	3.3
21	240	3.1						3.3
22	240	3.5						3.3
23	230	3.4						3.3

Time: 120.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 2 minutee.

Table 35

Upsala, Sweden (59.8°N, 17.6°E) May 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	2.8					2.2	3.1
01	265	2.4					2.0	3.05
02	270	2.3			---	---		3.1
03	260	2.6			---	E	2.2	3.1
04	260	3.2	225	2.8	---	E	1.8	3.1
05	360	3.6	225	3.2	120	1.8	2.4	3.1
06	370	3.9	225	3.4	110	2.2	3.3	3.0
07	405	4.1	215	3.7	110	2.4	3.2	2.9
08	375	4.3	210	3.8	105	2.6	3.3	2.9
09	370	4.5	210	3.9	105	2.7	3.4	3.1
10	360	4.6	210	4.0	105	2.8	3.4	3.1
11	355	4.7	210	4.0	105	2.9	3.1	3.1
12	360	4.7	210	4.0	105	3.0	3.1	3.1
13	360	4.6	205	4.0	105	2.9	3.0	3.1
14	350	4.7	210	4.0	105	2.8	3.2	3.1
15	355	4.4	210	3.9	105	2.7	3.2	3.1
16	340	4.5	220	3.8	105	2.5	3.4	3.1
17	320	4.5	225	3.6	110	2.3	3.5	3.1
18	290	4.6	235	3.3	110	2.0	3.6	3.2
19	260	4.6	240	(2.8)	130	1.6	3.3	3.3
20	250	4.5	240	---	---	E	2.5	3.2
21	240	4.8			---	---		3.2
22	235	4.2						3.2
23	250	3.7						3.1

Time: 15.0°E.
Sweep: 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 36*

Inverneee, Scotland (57.4°N, 4.2°W) May 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	265	3.1					1.4	3.0
01	265	2.7					1.2	2.9
02	275	(2.4)					1.1	2.9
03	275	2.2					1.0	2.9
04	285	2.6	(250)	(2.4)		(1.4)	2.3	2.9
05	275	3.3	240	3.0	125	1.6	2.0	3.0
06	320	3.7	225	3.3	110	2.0	2.9	3.1
07	405	4.0	220	3.6	115	2.2	2.8	3.0
08	425	4.2	215	3.7	110	2.5	2.9	2.9
09	390	4.4	215	3.9	105	2.7	3.7	3.0
10	390	4.5	215	4.0	110	2.8	3.3	3.0
11	365	4.7	210	4.0	110	2.9	3.6	3.0
12	385	4.7	210	4.1	105	3.0	3.5	3.0
13	395	4.6	210	4.1	105	2.9	3.3	3.0
14	380	4.6	215	4.0	110	2.9	3.5	2.9
15	395	4.5	215	4.0	105	2.8	3.3	2.9
16	350	4.6	220	3.9	110	2.7	3.0	3.0
17	330	4.6	220	3.7	110	2.5	3.1	3.1
18	315	4.5	225	3.4	120	2.1	2.3	3.1
19	280	4.6	245	3.0	140	1.8	2.5	3.1
20	255	4.8					2.0	3.1
21	245	4.9					1.2	3.1
22	245	(4.6)						3.1
23	255	(3.8)						3.1

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutee.
*Average values except foF2 and fEe, which are median valuee.

Table 37

De Bilt, Holland (52.1°N, 5.2°E) May 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.4						3.0
01	260	3.2						3.0
02	(260)	3.0						3.0
03	(270)	2.9						3.0
04	<260	3.2	---	---				3.05
05	310	3.7	240	3.2	120	2.0	2.2	3.05
06	340	4.2	240	3.7	120	2.2	2.9	3.1
07	380	4.2	235	3.8	120	2.5	3.2	3.0
08	360	4.6	225	4.0	115	2.7	3.4	3.05
09	340	4.8	220	4.1	115	2.9	3.5	3.2
10	350	5.0	220	4.2	115	3.0	3.7	3.15
11	340	5.0	220	4.2	120	3.0	3.6	3.05
12	340	5.0	210	4.2	115	3.0	3.3	3.1
13	360	4.9	220	4.2	115	3.0	3.2	3.0
14	355	4.9	220	4.1	120	3.0	3.2	3.0
15	350	4.8	240	4.0	115	2.9	3.2	3.1
16	340	4.9	240	3.9	120	2.6	3.6	3.1
17	310	4.8	240	3.6	120	2.4	3.5	3.1
18	280	4.8	240	3.2	120	1.9	3.2	3.2
19	260	5.2	---	---			2.5	3.1
20	240	5.2					2.4	3.3
21	240	5.0						3.25
22	240	4.6						3.2
23	(240)	3.6						3.05

Time: 0.0°.
Sweep: 1.4 Mc to 11.2 Mc in 6 minutes, automatic operation.

Table 38

Lindau/Harz, Germany (51.6°N, 10.1°E) May 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.6					2.2	3.2
01	250	3.6					2.1	3.1
02	260	3.2					2.2	3.1
03	260	3.0					2.2	3.1
04	260	3.0	---	---	---	E	2.2	3.2
05	275	3.4	240	2.7	---	E	2.9	3.2
06	310	3.9	225	3.3	115	2.0	2.9	3.2
07	310	4.4	225	3.6	110	2.3	3.6	3.3
08	360	4.4	215	3.8	105	2.6	3.8	3.1
09	335	4.8	215	3.9	105	2.8	4.0	3.2
10	320	5.0	210	4.0	105	2.9	4.3	3.25
11	340	5.0	210	4.1	100	3.0	4.2	3.2
12	340	5.0	205	4.2	100	3.0	4.2	3.2
13	335	4.8	210	4.1	100	3.0	4.6	3.2
14	360	4.8	210	4.1	105	3.0	4.2	3.1
15	350	4.8	215	4.0	100	2.9	3.9	3.1
16	320	4.8	225	3.8	105	2.7	3.7	3.25
17	320	4.9	225	3.7	110	2.5	4.2	3.2
18	280	5.0	225	3.4	115	2.2	4.2	3.3
19	260	5.2	230	---	120	1.7	3.4	3.3
20	250	5.4					3.1	3.3
21	230	5.6					2.6	3.3
22	230	5.0					2.4	3.3
23	240	4.3					2.4	3.3

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 8 minutes.

Table 39*

Slough, England (51.5°N, 0.6°W) May 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	265	3.6					2.6	3.0
01	275	3.4					2.6	2.95
02	270	3.1					2.6	2.95
03	265	3.0					2.6	3.0
04	275	3.0	(270)	(2.2)			2.6	3.0
05	290	3.7	245	3.0	125	1.7	3.5	3.15
06	350	4.1	230	3.4	120	2.1	4.4	3.1
07	360	4.3	225	3.7	115	2.4	4.5	3.1
08	365	4.5	225	3.9	115	2.7	4.8	3.1
09	355	4.7	230	4.0	115	2.9	4.7	3.15
10	350	4.9	225	4.1	115	3.0	5.0	3.1
11	335	5.0	220	4.2	115	3.0	5.0	3.2
12	375	4.9	220	4.2	115	3.1	4.9	3.05
13	395	4.8	225	4.2	115	3.0	4.9	3.1
14	350	4.9	230	4.2	115	3.0	4.8	3.1
15	365	4.8	235	4.1	115	2.9	4.7	3.05
16	345	4.9	245	3.9	115	2.7	4.5	3.1
17	315	5.0	240	3.7	115	2.5	4.2	3.1
18	300	4.9	235	3.5	120	2.1	3.7	3.1
19	275	5.3	260	3.0	130	1.7	3.1	3.15
20	250	5.7					2.6	3.15
21	240	5.5					2.5	3.15
22	245	5.0					2.4	3.2
23	250	4.3					2.4	3.1

Time: 0.0°.
Sweep: 0.55 Mc to 16.5 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 40

Formosa, China (25.0°N, 121.5°E) May 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.6					3.7	2.8
01	270	4.2					3.0	3.2
02	240	4.8					3.6	3.2
03	250	4.6					2.4	3.4
04	240	3.1					2.4	3.35
05	240	3.6					3.6	3.3
06	240	5.0			---	---	3.8	3.5
07	240	6.0	230	3.6	110	2.4	7.0	3.7
08	270	5.7	225	4.1	105	2.8	6.0	3.4
09	230	6.0	230	4.3	100	3.1	7.9	3.2
10	350	6.7	200	---	110	3.2	6.0	2.9
11	350	8.2	215	---	110	3.4	6.6	2.9
12	320	9.4	210	(4.5)	---	---	5.4	3.0
13	320	9.7	210	4.4	110	---	5.4	3.1
14	310	10.8	220	4.3	110	3.3	4.8	3.2
15	290	10.7	225	4.2	110	3.1	5.0	3.2
16	280	10.4	240	3.9	110	2.8	5.4	3.3
17	260	9.8	240	3.7	100	2.4	4.6	3.4
18	240	9.9			---	---	4.6	3.4
19	215	8.0					3.2	3.6
20	220	6.6					3.7	3.3
21	240	5.2					3.8	3.2
22	280	5.0					3.2	3.0
23	300	4.2					2.8	3.0

Time: 120.0°E.
Sweep: 1.1 Mc to 19.5 Mc in 15 minutes, manual operation.

Table 41*

Singapore, British Malaya (1.3°N, 103.8°E) May 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.1					3.9	(3.1)
01	240	2.9					3.4	(3.5)
02	240	2.5					3.1	(3.4)
03	240	2.0					3.0	(3.5)
04	250	1.8					3.1	(3.4)
05	(255)	1.4					3.4	---
06	250	3.2					3.1	3.2
07	255	5.7	235	(3.7)	120	2.2	3.9	3.2
08	300	7.3	220	4.0	115	2.7	5.4	2.9
09	315	8.1	210	4.2	115	3.0	5.6	2.8
10	330	9.0	205	4.3	110	3.2	6.6	2.6
11	335	9.6	200	4.3	110	3.3	8.4	2.5
12	340	9.3	200	4.4	110	3.3	6.0	2.6
13	330	9.5	200	4.3	110	3.3	6.1	2.6
14	320	9.2	200	4.3	110	3.2	5.7	2.7
15	305	9.0	205	4.2	115	3.0	5.1	2.8
16	280	8.9	225	4.0	115	2.7	5.0	2.9
17	255	8.6	230	(3.5)	120	2.2	5.3	3.0
18	235	8.6				(1.5)	3.7	3.1
19	230	7.6					4.0	3.3
20	225	6.6					4.3	3.4
21	220	5.5					4.9	3.5
22	225	3.6					3.6	3.5
23	240	3.0					4.1	(3.1)

Time: 105.0°E.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 42

Leopoldville, Belgian Congo (4.3°S, 15.3°E) May 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M2000)F2
00	220	---					3.0	---
01	(205)	---					3.3	---
02	(240)	---					3.0	---
03	---	---					3.0	---
04	---	---					3.0	---
05	240	3.4			---	---	2.5	2.7
06	250	5.2	220	---	120	2.2	3.0	3.1
07	290	5.9	215	4.0	110	2.7	3.7	2.6
08	290	6.8	210	4.1	110	3.0	3.9	2.6
09	295	7.2	200	4.2	110	3.2	4.2	2.4
10	290	8.1	200	4.3	110	3.2	4.0	2.5
11	295	8.4	200	4.3	105	3.3	4.0	2.45
12	285	9.0	200	4.2	105	3.2	3.4	2.5
13	280	9.0	200	4.1	105	3.1	3.3	2.5
14	270	8.2	220	4.0	110	3.0	3.3	2.6
15	260	7.6	230	---	110	2.6	3.3	2.6
16	245	7.3	230	---	120	2.0	3.2	2.6
17	230	6.6					3.6	2.6
18	220	5.8					3.0	2.75
19	210	4.9					3.0	2.9
20	215	3.2					2.9	2.8
21	(240)	3.2					3.1	2.4
22	(265)	(4.0)					2.9	(2.4)
23	230	(3.0)					2.7	(2.5)

Time: 0.0°.
Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 43

Rarotonga I. (21.3°S, 159.8°W) May 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.2						3.0
01	300	3.0						3.0
02	290	2.9						3.1
03	290	3.1						3.1
04	260	2.9						3.3
05	260	2.7						3.2
06	280	2.5						3.2
07	250	4.5	230	2.6	---	E	2.4	3.5
08	250	5.5	210	3.5	115	2.2	3.0	3.6
09	260	5.7	200	3.9	110	2.6	3.3	3.5
10	260	5.9	200	4.1	105	2.8	3.5	3.6
11	270	5.7	200	4.2	105	3.0	3.9	3.6
12	290	5.8	200	4.3	105	3.1	4.1	3.4
13	270	6.3	200	4.2	105	3.1	4.0	3.5
14	260	6.1	210	4.1	110	3.0	4.1	3.5
15	250	6.1	200	4.0	110	2.8	3.8	3.45
16	260	6.0	220	3.6	---	2.5	4.1	3.4
17	250	6.0	240	3.0	---	1.9	3.8	3.4
18	230	5.9					3.5	3.5
19	220	4.7					3.0	3.4
20	240	3.8					2.8	3.2
21	250	3.4					2.6	3.2
22	250	3.2					2.4	3.25
23	270	2.9					2.0	3.1

Time: 157.5°W.
Sweep: 2.0 Mc to 16.0 Mc, manual operation.

Table 44

Johannesburg, Union of S. Africa (26.2°S, 28.1°E) May 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(230)	2.7						3.2
01	<240	2.7						3.1
02	<250	2.8						3.15
03	230	2.7						3.2
04	<230	2.8						3.3
05	<230	2.6						3.3
06	<230	2.6						3.2
07	220	4.4	---	---	---	1.8		3.6
08	230	5.3	220	3.3	120	2.3		3.7
09	250	5.6	210	3.8	110	2.7		3.6
10	260	5.8	210	4.1	110	2.9		3.45
11	260	6.0	200	4.2	110	3.1		3.45
12	280	6.0	200	4.2	110	3.1		3.4
13	270	5.6	210	4.1	110	3.1	3.6	3.4
14	280	6.0	200	4.0	110	3.0	3.6	3.2
15	250	6.5	220	3.8	110	2.7	3.5	3.4
16	240	5.9	220	3.4	120	2.4	3.1	3.5
17	220	5.3	---	---	---	1.8	2.0	3.5
18	210	4.2					1.9	3.5
19	<210	3.1					1.7	3.5
20	<240	3.1						3.3
21	220	3.3						3.3
22	220	3.2						3.4
23	<230	2.9						3.3

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 45

Watheroo, W. Australia (30.3°S, 115.9°E) May 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.7					2.3	3.2
01	260	3.9					2.5	3.1
02	250	4.1					2.2	3.1
03	250	4.0					2.0	3.2
04	240	3.9					2.4	3.3
05	220	3.7					1.4	3.4
06	230	3.0					1.8	3.3
07	230	4.0				1.6		3.4
08	240	4.9	230	2.7		2.4	2.7	3.6
09	250	5.3	240	3.7		2.7	3.4	3.5
10	270	6.1	240	4.0		3.2	3.4	3.5
11	280	6.0	230	4.1		3.3	3.5	3.4
12	280	5.9	230	4.2		3.2	3.5	3.4
13	290	6.0	220	4.1		3.0	3.6	3.35
14	280	6.1	220	4.0		3.1	3.7	3.3
15	260	6.5	230	3.8		2.8	3.5	3.4
16	250	5.9	230	3.4		2.5	2.7	3.5
17	230	4.9				2.0	2.6	3.6
18	220	3.8					2.8	3.5
19	230	3.0					1.8	3.25
20	250	3.2					2.2	3.2
21	250	3.3					2.1	3.2
22	250	3.2					2.0	3.15
23	250	3.4					2.1	3.2

Time: 120.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 2 minutes.

Table 46

Capetown, Union of S. Africa (34.2°S, 18.3°E) May 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<240	2.6						3.2
01	<250	2.7						3.2
02	250	2.7						3.1
03	<250	2.7						3.1
04	<250	2.8						3.1
05	250	2.9						3.2
06	220	2.8						3.2
07	220	2.7						3.3
08	220	4.4			140	1.6		3.7
09	230	5.0	220	3.1	120	2.3		3.6
10	250	5.1	220	3.7	120	2.6		3.5
11	260	5.5	210	4.0	120	2.9		3.5
12	270	5.7	210	4.0	110	3.0		3.4
13	270	5.7	200	4.0	110	3.0		3.3
14	280	6.0	210	4.0	120	2.9		3.3
15	260	6.6	230	3.8	120	2.8	3.0	3.4
16	250	6.2	230	3.5	120	2.5		3.5
17	230	5.6	220	2.7	120	2.0	2.0	3.6
18	210	4.6			---	---	1.7	3.6
19	220	2.8						3.5
20	230	2.6						3.2
21	230	3.0						3.4
22	230	2.9						3.4
23	<230	2.6						3.3

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 47

Christchurch, New Zealand (43.6°S, 172.8°E) May 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.0					3.0	3.05
01	270	3.0					3.0	3.1
02	270	3.0					2.8	3.1
03	270	3.0					2.4	3.1
04	260	2.9					2.3	3.1
05	250	2.7						3.3
06	240	2.3				—		3.3
07	240	3.1				—	2.4	3.4
08	240	4.1	240	2.6		1.7		3.5
09	250	4.5	230	3.3		2.2		3.5
10	260	4.6	220	3.6		2.4	3.3	3.5
11	280	4.8	220	3.8		2.5	3.8	3.4
12	270	5.2	230	3.8		2.6	4.3	3.4
13	270	5.0	230	3.8		2.6	4.1	3.4
14	270	5.1	230	3.7		2.4	3.9	3.4
15	250	5.4	230	3.3		2.2	3.0	3.5
16	230	5.1	230	2.4		1.7	2.9	3.5
17	230	4.4				—	2.9	3.4
18	250	3.4						3.1
19	250	3.0						3.1
20	250	2.9						3.2
21	270	2.7						3.1
22	270	2.9					2.9	3.1
23	270	2.9					3.0	3.1

Time: 172.5°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 48*

Falkland Is. (51.7°S, 57.8°W) April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.8						2.8
01	295	2.9					2.3	2.8
02	290	2.9					2.9	2.8
03	290	2.9					1.8	2.9
04	275	2.9					1.8	3.0
05	240	3.0					3.5	3.3
06	225	3.0					4.6	3.4
07	210	4.3			(160)	1.6		3.7
08	215	5.1			120	2.1	2.2	3.6
09	(245)	5.4	220		110	2.4	4.4	3.6
10	(255)	6.3	220		110	2.6	5.4	3.5
11	250	6.8	215	3.9	110	2.7	4.7	3.5
12	240	6.6	215	3.9	105	2.7	4.8	3.6
13	230	6.6	215	3.9	105	2.7	3.9	3.7
14	230	5.8	210	(3.6)	(115)	2.5	5.1	3.7
15	230	5.5	(220)		(115)	2.3	3.8	3.7
16	230	5.3			(130)	2.0	3.1	3.7
17	220	5.0					3.1	3.6
18	225	4.3					2.8	3.5
19	230	3.5					2.0	3.5
20	245	2.9					1.7	3.2
21	270	2.8						3.0
22	280	2.9					1.9	2.9
23	300	2.9						2.9

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median.

Table 49*

Port Lockroy (64.8°S, 63.5°W) — April 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	295	2.6						2.8
01	295	2.6					1.2	2.8
02	305	2.5					1.3	2.8
03	285	2.6					1.3	2.8
04	275	2.5					1.4	2.9
05	260	2.6						3.0
06	250	2.5					1.0	3.0
07	230	2.8					1.0	3.3
08	225	3.4				(2.0)	1.7	3.6
09	220	4.5				(2.1)	2.6	3.6
10	220	5.4			(110)	(2.2)	3.2	3.5
11	215	5.5			(105)	2.4	2.8	3.6
12	215	6.0			(105)	2.4	2.7	3.6
13	215	5.8			(105)	2.4	2.7	3.6
14	215	5.4			(110)	2.3		3.7
15	220	5.4			(110)	2.1	2.4	3.6
16	215	4.9			(115)	(2.0)	1.6	3.5
17	220	4.6			(130)	(1.6)	1.9	3.4
18	225	4.5					1.8	3.4
19	235	4.0						3.3
20	240	3.7						3.2
21	255	3.0						3.1
22	280	2.8						3.0
23	290	2.7						2.9

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 50

Delhi, India (28.6°N, 77.1°E) — March 1954 **

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	2.8						3.15
01	300	2.6						3.2
02	---	---						3.05
03								
04	270	2.6						3.4
05	260	2.7						3.4
06	260	3.3						3.45
07	240	5.4						3.55
08	260	6.0						3.4
09	260	6.4						3.4
10	260	7.6						3.4
11	260	> 8.2						3.4
12	260	> 8.3						3.35
13	280	8.6						3.35
14	260	> 8.1						3.4
15	240	7.7						3.5
16	240	7.4						3.6
17	240	7.2						3.6
18	240	6.1						3.6
19	220	5.3						3.7
20	240	3.8						3.55
21	260	3.2						3.4
22	260	2.9						3.4
23	280	2.9						3.3

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 51

Bombay, India (19.0°N, 73.0°E) — March 1954 **

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06:30	270	4.7						3.25
07	300	5.4						3.1
08	330	7.1						2.95
09	330	7.8						2.9
10	360	8.5						2.8
11	390	9.7						2.7
12	390	10.8						2.65
13	390	11.4						2.65
14	390	11.7						2.6
15	420	11.9						2.55
16	390	11.7						2.55
17	390	11.2						2.65
18	390	10.7						2.7
19	360	9.3						2.8
20	330	8.3						2.9
21	300	6.8						3.1
22	300	5.9						3.15
23								

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 52

Madras, India (13.0°N, 80.2°E) — March 1954 **

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	340	5.2						2.9
07	380	6.6						2.75
08	420	7.4						2.55
09	420	7.7						2.45
10	450	7.6						2.45
11	450	7.8						2.45
12	450	8.0						2.45
13	450	8.3						2.45
14	450	8.6						2.45
15	450	9.1						2.45
16	450	9.4						2.45
17	420	>9.0						2.5
18	420	9.0						2.55
19	390	>8.0						2.65
20	390	7.4						2.7
21	360	7.0						2.75
22	330	>6.5						2.9
23								

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 53

Tiruchy, India (10.8°N, 78.8°E) — March 1954 **

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	360	4.3						2.85
07	420	6.4						2.45
08	480	7.3						2.35
09	480	7.1						2.3
10	500	6.9						2.25
11	510	7.2						2.25
12	500	7.5						2.25
13	510	7.8						2.25
14	510	8.2						2.25
15	480	8.6						2.3
16	480	8.6						2.3
17	480	>8.8						2.3
18	450	8.5						2.35
19	450	8.0						2.4
20	450	7.4						2.4
21	420	7.2						2.45
22								
23								

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 54

Townsville, Australia (19.3°S, 146.7°E) — March 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	4.0					3.7	(3.0)
01	260	3.9					3.1	3.1
02	250	3.7					2.6	3.1
03	260	3.4					2.8	3.0
04	250	3.2					2.1	3.2
05	250	3.0					1.9	3.1
06	250	3.1			---	E	2.2	3.3
07	240	4.5	---	---	120	1.8	3.2	3.5
08	300	5.5	240	3.9	100	2.4	3.8	3.3
09	300	6.2	220	4.1	100	2.9	4.3	3.2
10	300	6.9	200	4.3	100	3.2	4.4	3.2
11	310	7.2	200	4.3	110	3.2	3.9	3.1
12	300	7.6	200	4.4	100	3.3	4.6	3.1
13	290	7.5	200	4.3	100	3.3	4.1	3.2
14	290	7.4	200	4.3	100	3.2	4.8	3.15
15	280	7.7	200	4.1	110	3.2	4.5	3.3
16	260	7.3	230	3.8	100	2.8	5.2	3.3
17	250	6.6	240	3.5	110	2.4	4.5	3.4
18	240	5.5	---	---	---	---	4.0	3.4
19	250	4.6					3.6	3.1
20	250	4.4					3.6	3.0
21	280	4.0					3.8	3.0
22	280	4.0					3.2	3.05
23	290	3.9					3.8	3.0

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 55

Brisbane, Australia (27.5°S, 153.0°E) March 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(300)	(4.1)					(3.6)	(2.9)
01	(260)	(4.0)					(3.6)	(3.2)
02	(240)	(4.0)					(2.6)	(3.1)
03	(260)	(3.6)					(3.3)	(3.3)
04	(250)	(3.5)						(3.1)
05	(250)	(3.5)						(3.2)
06	(240)	(4.0)						(3.55)
07	(250)	(5.2)	230	---	---	---	(3.8)	(3.5)
08	(270)	5.4	220	4.1	---	---	(4.2)	(3.4)
09	(300)	(5.7)	220	4.3	---	---	(4.1)	(3.3)
10	(300)	(6.1)	---	4.4	---	---	(4.8)	(3.2)
11	(300)	(6.2)	---	---	---	---	(5.3)	(3.2)
12	(280)	(7.0)	---	---	---	---		(3.2)
13	(280)	(6.7)	---	---	---	---	(5.4)	(3.3)
14	(300)	(6.4)	---	---	---	---		(3.2)
15	(280)	(6.4)	---	---	---	---		(3.25)
16	(270)	6.8	---	---	---	---	(4.9)	3.3
17	250	6.2	---	---			4.2	3.4
18	(240)	5.4					(4.2)	3.3
19	240	5.0					4.0	3.2
20	(240)	(4.3)					(3.2)	(3.3)
21	(280)	(4.1)					(3.6)	(3.0)
22	(300)	(4.1)					(3.9)	(3.0)
23	(290)	(4.1)					(3.8)	(3.1)

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 56

Canberra, Australia (35.3°S, 149.0°E) March 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	3.7					3.4	3.0
01	---	3.5					3.1	3.0
02	---	(3.4)					3.1	3.0
03	---	(3.3)					2.5	3.1
04	---	(3.0)					2.2	3.1
05	---	(2.8)					(1.5)	(3.0)
06	240	3.1			---	---		3.25
07	245	4.0	230	---	(110)	1.9		3.5
08	310	4.6	230	3.7	110	2.5	3.1	3.3
09	315	4.8	220	4.0	110	2.7	3.6	3.2
10	345	5.2	210	4.1	100	3.0	3.7	3.1
11	330	5.6	210	4.1	100	3.0	3.8	3.2
12	320	5.8	210	4.2	100	3.1	3.6	3.2
13	310	5.9	210	4.2	100	3.1	3.7	3.2
14	300	5.8	215	4.1	100	3.1	3.6	3.2
15	300	5.6	220	4.0	100	2.9	3.7	3.1
16	290	5.5	230	3.8	110	2.6	3.6	3.3
17	260	5.3	240	(3.5)	110	2.3	3.2	3.3
18	250	5.1	---	---	---	1.8	3.3	3.3
19	240	5.0					3.1	3.1
20	---	4.4					3.4	3.1
21	---	4.0					3.1	3.0
22	---	3.8					3.6	3.0
23	---	3.7					3.6	3.0

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 57

Hobart, Tasmania (42.9°S, 147.3°E) March 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	2.6						2.9
01	270	2.3						3.0
02	260	2.2						3.0
03	250	2.0						3.0
04	270	2.0						3.0
05	270	2.0						3.0
06	250	2.5			---	E		3.05
07	220	3.6			100	2.0		3.1
08	210	4.1			100	2.4		3.05
09	380	4.2	200	3.9	100	2.6	2.8	2.8
10	380	4.6	200	4.0	100	2.9	3.1	2.8
11	360	5.0	200	4.0	100	3.0	3.3	2.9
12	350	5.0	200	4.1	100	3.0	3.2	3.0
13	330	5.2	200	4.1	100	3.0		3.0
14	310	5.3	200	4.0	100	3.0	3.0	3.0
15	300	5.2	?00	4.0	100	2.8		3.0
16	210	5.0	---	---	100	2.6		3.1
17	220	4.9			100	2.2		3.1
18	230	5.0			100	1.4	2.5	3.1
19	230	4.7						3.1
20	250	4.5						3.0
21	250	3.5						3.0
22	250	3.0						3.0
23	250	2.7						3.0

Time: 150.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 58*

Ibadan, Nigeria (7.4°N, 4.0°E) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	263	4.7					1.6	(3.3)
01	260	4.4					1.3	---
02	261	3.8					1.0	(3.2)
03	251	3.4					1.2	---
04	237	(2.4)					1.2	---
05	234	1.9					1.9	---
06	256	3.0					1.9	---
07	---	5.6	235	---	111	2.0	4.6	3.2
08	300	6.6	219	3.8	108	2.8	6.0	2.9
09	337	6.7	211	4.1	109	3.2	8.2	2.5
10	380	6.4	205	4.2	106	3.3	10.0	2.3
11	407	6.2	204	4.3	108	3.4	10.2	2.4
12	362	6.9	198	4.3	107	3.4	10.0	2.6
13	368	7.0	197	4.3	107	3.4	10.0	2.5
14	369	7.0	204	4.2	108	3.2	8.8	2.3
15	348	7.3	211	4.0	108	3.0	6.4	2.4
16	307	7.6	232	---	111	2.7	5.1	2.5
17	---	7.7	241		115	2.0	4.8	2.5
18	272	6.9	---		(127)	1.3	2.1	2.6
19	281	6.6					2.0	2.5
20	290	6.7					2.2	---
21	268	6.0					2.2	---
22	256	5.4					1.9	3.0
23	251	4.8					1.2	---

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 59

Fribourg, Germany (48.1°N, 7.8°E) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<260	3.2					2.2	3.05
01	245	3.2					1.8	3.1
02	255	3.0					1.6	3.05
03	<260	3.0						3.1
04	245	2.7						3.2
05	<230	2.4						3.25
06	238	2.2						3.25
07	<240	2.3						3.25
08	218	4.3	220	---	<159	1.5	2.0	3.6
09	220	5.3	220	---	121	2.0	2.0	3.65
10	230	5.6	220	---	119	2.2	2.3	3.7
11	228	5.9	230	---	115	2.4	2.3	3.65
12	230	6.0	220	---	119	2.5	2.5	3.7
13	230	5.5	225	(3.4)	119	2.4	2.6	3.6
14	230	5.5	230	---	120	2.2	2.5	3.65
15	220	5.3	230	---	129	2.0	2.3	3.6
16	215	4.7	---	---	---	---	2.1	3.55
17	215	3.3					2.2	3.4
18	232	2.8					2.0	3.25
19	245	2.9					2.0	3.2
20	240	3.0					2.3	3.2
21	235	3.0						3.15
22	250	3.1					2.0	3.05
23	265	3.2					2.1	3.05

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 60

Fribourg, Germany (48.1°N, 7.8°E) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.2						2.9
01	270	3.2						2.95
02	<265	3.2					1.7	2.95
03	<265	3.2					1.7	3.0
04	250	2.6						3.05
05	<240	2.3						3.2
06	<240	2.2						3.2
07	230	3.0	---	---				3.3
08	225	4.5	230	---	125	1.7	2.4	3.55
09	230	5.0	230	---	119	2.0	2.9	3.55
10	245	5.4	228	3.5	115	2.4	3.1	3.6
11	250	5.6	220	3.6	115	2.5	2.8	3.5
12	240	6.2	222	3.6	115	2.6	3.0	3.55
13	240	5.7	230	3.6	117	2.5	2.7	3.55
14	240	5.6	235	---	119	2.4	2.3	3.5
15	235	5.6	235	---	120	2.0	2.2	3.5
16	225	5.2	218	---	---	1.6	2.4	3.55
17	220	4.3					2.2	3.45
18	<240	3.2					2.6	3.2
19	240	3.0					2.1	3.2
20	<240	2.9					2.0	3.15
21	265	2.8					1.8	2.95
22	270	2.8					1.9	2.9
23	270	3.0						2.95

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 61

Dakar, French W. Africa (14.6°N, 17.4°W) — November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	265	6.8					2.4	3.25
01	240	6.6					2.1	3.35
02	235	5.6					1.9	3.35
03	225	4.4					2.4	3.4
04	230	2.8					2.2	3.25
05	240	2.5					2.4	3.15
06	255	3.5	---	---			2.3	3.25
07	255	6.8	235	3.4	---	2.1	3.3	3.45
08	270	8.6	225	4.2	---	2.6	4.3	3.45
09	275	10.0	215	4.3	---	3.0	4.0	3.35
10	280	11.0	215	4.4	---	3.2	4.2	3.25
11	290	11.0	210	4.5	---	3.3	4.1	3.2
12	285	11.2	210	4.5	---	3.4	4.0	3.1
13	285	10.4	220	4.5	---	3.3	3.7	3.05
14	285	10.3	220	4.4	---	3.1	3.7	3.15
15	285	10.2	220	4.3	---	2.9	3.6	3.05
16	270	10.0	240	4.0	---	2.5	3.6	3.2
17	250	10.4	250	---	---	1.8	3.6	3.25
18	250	9.9	---	---			3.5	3.3
19	255	9.6					3.5	3.1
20	230	9.2					3.5	3.1
21	240	7.0					3.4	3.05
22	255	8.4					3.4	3.05
23	270	6.8					2.5	3.15

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 62

Fribourg, Germany (48.1°N, 7.8°E) — October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<275	3.2					1.9	2.9
01	280	3.3					1.8	2.85
02	275	3.3					1.8	2.9
03	<275	3.2						2.9
04	<260	3.1					1.8	3.0
05	230	2.7						3.25
06	<240	2.7						3.2
07	230	4.3	240	---	129	1.7	2.0	3.45
08	238	5.2	235	---	120	2.3	2.8	3.55
09	250	5.6	230	3.7	113	2.6	3.3	3.5
10	260	6.1	220	4.0	111	2.8	3.9	3.4
11	255	6.8	220	(4.0)	111	2.8	3.9	3.5
12	255	6.3	225	4.0	111	3.0	3.8	3.45
13	255	6.2	220	4.0	110	2.9	3.7	3.45
14	260	6.2	235	(3.8)	109	2.8	3.9	3.4
15	250	6.3	240	---	111	2.5	3.2	3.45
16	240	6.0	245	---	110	2.1	3.2	3.4
17	235	5.6	---	---	---	1.6	3.1	3.45
18	230	5.2					2.4	3.3
19	230	4.8					2.3	3.3
20	235	4.0					2.1	3.2
21	245	3.4					2.0	3.1
22	258	3.3					1.9	2.95
23	265	3.2					1.9	2.95

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 63

Fribourg, Germany (48.1°N, 7.8°E) — September 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	275	3.3					2.5	2.85
01	< 280	3.2					2.2	2.85
02	< 275	3.2					2.0	2.85
03	275	3.0					1.8	2.85
04	< 270	3.0					1.8	2.9
05	< 265	2.6					2.0	3.05
06	260	3.4	245	---	130	<1.6	2.6	3.2
07	260	4.1	235	3.4	120	2.1	3.1	3.25
08	300	5.0	< 230	3.7	115	2.5	3.3	3.3
09	310	5.1	230	4.0	111	2.8	3.7	3.25
10	300	5.3	210	4.1	111	2.9	3.6	3.25
11	290	5.5	230	4.2	111	3.0	3.6	3.3
12	305	5.5	215	4.2	111	3.1	3.5	3.25
13	305	5.4	225	4.2	110	3.0	3.5	3.25
14	310	5.4	220	4.1	111	3.0	3.3	3.25
15	290	5.3	230	4.0	111	2.8	2.9	3.3
16	295	5.3	240	---	112	2.5	2.9	3.25
17	280	5.3	245	---	121	2.1	3.0	3.15
18	260	5.9	245	---	---	1.6	3.0	3.2
19	240	6.0					2.5	3.15
20	< 250	5.6					2.4	3.15
21	240	5.0					2.6	3.15
22	< 260	4.2					2.7	3.0
23	270	3.4					2.9	2.9

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 64

Fribourg, Germany (48.1°N, 7.8°E) — June 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	265	4.4					2.7	2.95
01	< 270	4.0					2.8	2.9
02	< 270	3.8					3.0	2.95
03	270	3.4					3.2	2.95
04	< 270	3.4	255	---			2.6	3.05
05	342	4.0	245	3.0	121	1.8	3.2	3.0
06	340	4.6	235	3.6	113	2.3	3.8	3.0
07	340	4.7	235	3.9	111	(2.6)	4.8	(2.95)
08	340	5.0	215	4.0	108	2.8	4.8	3.1
09	335	5.4	220	4.2	103	3.0	4.7	3.05
10	340	5.1	212	4.3	105	3.1	4.8	3.1
11	382	5.3	212	4.3	103	3.2	4.8	(2.95)
12	395	5.2	205	4.4	105	3.2	4.8	(2.9)
13	370	5.2	225	4.4	105	3.2	4.2	(2.9)
14	380	5.1	220	4.3	105	3.2	4.0	(3.0)
15	410	5.0	230	4.2	108	3.0	4.0	2.9
16	350	5.2	225	4.0	109	2.9	4.0	3.0
17	325	5.6	245	3.9	109	2.6	4.6	3.05
18	312	5.6	245	3.5	113	2.3	3.6	3.05
19	280	6.0	<250	3.0	121	1.8	3.9	3.0
20	262	6.4					3.8	3.15
21	245	6.4					3.3	3.15
22	242	6.4					3.0	3.05
23	260	4.6					3.0	3.0

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 65

Djibouti, French Somaliland (11.5°N, 43.1°E) — May 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	(3.9)						(2.8)
01	<330	(3.2)						---
02	300	(3.6)						(3.0)
03	290	3.5						(3.25)
04	260	3.1						(3.3)
05	260	3.0						3.2
06	245	6.0	240	---	121	2.1	3.4	3.4
07	295	7.0	230	---	122	2.6	3.4	3.2
08	330	7.6	230	4.4	117	3.2	3.6	2.9
09	360	7.5	220	4.5	114	3.3	4.0	2.65
10	380	7.2	210	4.6	112	3.4	4.3	2.55
11	390	7.2	220	4.4	---	3.5	4.4	2.6
12	385	7.6	230	4.5	115	3.6	4.4	2.6
13	380	>7.6	220	4.5	---	3.4	5.8	2.65
14	350	8.3	220	4.4	120	3.3	4.2	2.7
15	330	8.8	220	4.4	116	3.0	4.0	2.8
16	320	9.3	230	4.1	<122	2.6	4.2	2.8
17	< 270	>9.2	250	---	---	2.2	4.2	2.95
18	250	8.9					3.5	(2.95)
19	250	>8.0					3.0	3.0
20	260	>7.0					2.2	(2.95)
21	290	>6.0						(2.95)
22	300	5.1						(2.85)
23	325	4.5						(2.7)

Time: 35.6°E.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 66

Djibouti, French Somaliland (11.5°N, 43.1°E) — January 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	245	4.5						3.4
01	232	4.1						3.6
02	228	3.2						3.5
03	230	2.3						3.4
04	260	<1.8						3.5
05	---	<1.6					1.9	3.5
06	240	4.0			---	1.3	2.7	3.4
07	265	6.6	220	---	<117	2.3	3.5	3.3
08	300	7.8	215	4.3	109	2.8	4.4	3.0
09	325	7.6	205	4.4	---	3.2	6.6	2.7
10	340	7.3	192	4.6	---	3.4	6.4	2.7
11	<350	7.3	192	4.6	---	3.5	6.5	2.7
12	335	7.9	200	4.6	103	3.5	5.8	2.8
13	320	8.6	202	4.6	102	3.4	4.0	3.0
14	305	9.0	205	4.5	104	3.2	3.7	3.1
15	290	9.0	210	4.3	103	3.0	4.8	3.2
16	280	9.1	218	---	105	2.6	4.5	3.2
17	240	8.8	245	---	---	1.9	3.9	3.2
18	248	8.6					3.3	3.1
19	260	7.6					3.2	3.1
20	240	6.7					3.0	3.4
21	230	5.9					3.0	3.4
22	240	5.6					3.1	3.3
23	250	5.2					2.8	3.2

Time: 35.6°E.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 67

Djibouti, French-Somaliland (11.5°N, 43.1°E) December 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	4.7						3.35
01	240	4.7						3.35
02	230	4.6						3.6
03	220	3.3						3.55
04	220	2.7						3.55
05	230	2.0						3.45
06	230	5.1	---	---	153	1.6	2.3	3.45
07	250	7.4	215	---	109	2.4	3.4	3.4
08	275	8.2	205	---	109	2.8	3.6	3.15
09	300	8.6	205	4.5	109	3.2	6.0	2.95
10	320	8.6	205	4.7	103	3.3	5.5	2.9
11	320	8.8	200	4.8	99	3.4	4.5	2.95
12	310	9.1	205	4.7	101	3.4	4.6	2.9
13	305	9.5	205	4.6	105	3.3	4.3	3.05
14	290	9.7	205	4.4	99	3.2	3.5	3.05
15	280	9.6	210	4.2	107	2.9	4.2	3.05
16	(265)	(9.6)	215	---	107	2.4	4.2	3.05
17	240	9.0	---	---	---	1.7	3.3	3.05
18	240	8.6					3.1	3.05
19	250	7.1					2.6	2.95
20	245	(7.5)					3.0	3.2
21	240	6.5					2.5	3.2
22	240	5.7					2.8	3.4
23	235	5.0						3.3

Time: 35.6°E.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 68

Djibouti, French Somaliland (11.5°N, 43.1°E) November 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	6.4					2.2	3.3
01	220	6.7						3.5
02	205	>5.0						3.6
03	205	3.7						3.5
04	220	2.5						3.5
05	240	1.9						3.6
06	230	5.7			135	2.0	3.4	3.5
07	245	7.9	215	—	109	2.4	3.5	3.4
08	270	8.9	205	4.4	107	2.9	4.4	3.0
09	290	>9.1	200	4.6	105	3.3	6.5	2.8
10	300	>9.0	190	4.7	107	3.4	6.6	2.9
11	300	9.2	190	4.7	—	3.5	6.7	2.9
12	300	9.6	195	4.7	99	3.5	5.7	3.0
13	290	10.5	195	4.6	105	3.4	6.8	3.1
14	275	11.0	205	4.5	109	3.2	6.0	3.1
15	265	11.0	212	—	109	2.9	4.6	3.2
15	(250)	11.0	215	—	109	2.4	4.5	3.1
17	240	10.0			—	—	3.5	3.1
18	255	8.8					3.4	2.9
19	265	8.0					3.2	2.8
20	250	7.4					3.3	3.0
21	240	7.2					3.5	3.2
22	240	(7.2)					3.3	(3.3)
23	245	>5.0					2.8	3.2

Time: 35.6°E.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 69

Djibouti, French Somaliland (11.5°N, 43.1°E) October 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	8.2					2.4	3.4
01	215	8.4						3.5
02	205	5.8						3.6
03	215	4.5						3.5
04	220	3.5						3.4
05	215	2.8					2.5	3.5
06	220	6.7	---	—	131	2.0	3.6	3.5
07	250	8.4	215	---	100	2.8	4.0	3.4
08	272	9.6	210	---	109	3.1	4.2	3.2
09	290	>10.0	205	4.7	—	3.3	5.5	2.9
10	300	9.6	190	4.8	107	(3.6)	6.7	2.8
11	300	9.9	190	4.9	109	3.6	6.6	2.8
12	300	9.8	200	4.8	109	(3.6)	6.6	2.8
13	285	11.4	190	4.8	109	3.5	6.3	3.0
14	275	11.5	200	4.5	107	3.2	6.3	3.1
15	265	12.0	205	—	---	3.0	6.5	3.0
16	250	11.7	215	—	109	2.6	4.5	3.1
17	240	11.4	235	—	—	—	4.4	2.9
18	260	10.0					3.4	(2.7)
19	270	9.2						(2.7)
20	265	8.9					2.3	(2.8)
21	240	8.4					3.3	(3.0)
22	242	8.8					3.5	3.3
23	242	7.8					3.3	(3.2)

Time: 35.5°E.
Sweep: 1.25 Mc to 30.0 Mc in 10 minutes, automatic operation.

Table 70

Djibouti, French Somaliland (11.5°N, 43.1°E) September 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	252	(8.0)					2.2	< 3.2
01	230	8.5					2.1	(3.6)
02	(215)	5.3					1.6	(3.5)
03	(216)	4.5						(3.4)
04	215	3.5					2.2	(3.5)
05	(230)	3.2					2.3	(3.4)
06	(230)	6.8	—	—	—	2.3	3.0	(3.5)
07	(250)	8.1	210	—	—	2.8	3.5	3.4
08	(310)	8.6	212	—	—	3.2	4.2	3.1
09	(310)	9.2	190	—	—	3.4	6.8	2.7
10	(310)	8.6	205	4.9	—	—	6.6	2.7
11	310	8.8	190	4.9	—	—	6.6	2.5
12	(325)	8.9	195	4.8	—	3.6	6.3	2.7
13	315	9.5	192	4.8	—	3.5	4.4	2.7
14	300	10.8	205	4.5	—	—	7.0	(3.0)
15	280	11.6	208	4.4	—	—	5.9	(3.1)
16	(262)	(11.6)	210	—	—	—	4.3	(3.0)
17	(235)	>10.0	—	—	—	2.0	3.8	(2.9)
18	245	(9.8)					3.4	(2.8)
19	252	>9.2					3.1	(2.8)
20	(260)	7.6					2.5	—
21	250	8.3					3.4	—
22	(250)	8.2					3.7	—
23	270	7.5					3.4	—

Time: 35.6°E.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 71

Djibouti, French Somaliland (11.5°N, 43.1°E) August 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	(3.9)					1.9	(2.6)
01	350	(3.8)						—
02	(335)	---					2.8	—
03	(290)	---					2.0	—
04	< 260	(3.1)						(3.4)
05	250	2.8						(2.9)
06	230	5.9	—	---	125	2.1	3.3	(3.4)
07	270	7.1	215	---	109	2.5	4.1	3.4
08	305	7.5	208	4.6	101	3.2	4.4	3.1
09	(345)	8.4	202	4.7	—	—	6.2	(2.8)
10	(342)	8.3	200	(4.8)	—	3.5	5.0	2.6
11	380	7.9	202	4.9	—	3.6	6.4	2.6
12	392	8.0	202	4.9	—	3.7	5.2	2.6
13	(375)	8.7	205	(4.8)	—	(3.6)	5.4	2.6
14	348	9.0	205	4.6	---	3.5	4.4	(2.8)
15	(332)	>9.4	215	4.5	---	—	4.4	< 2.8
16	(315)	>10.0	225	---	---	—	4.1	(3.1)
17	(285)	10.2	242	---	—	—	4.2	(3.0)
18	252	10.0					3.6	(2.9)
19	250	>8.8					3.6	(2.9)
20	250	7.4					2.8	(3.2)
21	< 265	5.0						(3.0)
22	(280)	5.4						—
23	335	4.5					2.8	(2.5)

Time: 35.6°E.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 72

Djibouti, French Somaliland (11.5°N, 43.1°E) July 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	305	(4.8)					2.0	—
01	335	—					3.0	—
02	308	—					3.3	—
03	(308)	—					3.5	—
04	(270)	—					2.5	—
05	245	3.2					2.9	(3.2)
08	230	6.4	225	—	111	2.2	3.3	(3.5)
07	275	7.3	215	—	103	2.8	3.5	3.3
08	310	7.7	210	4.4	101	3.1	4.8	3.2
09	340	7.6	195	4.5	108	3.5	5.3	2.8
10	370	8.0	202	4.7	103	3.6	6.5	2.6
11	370	7.5	208	4.8	111	3.5	6.4	2.5
12	380	7.5	< 210	4.8	104	3.5	6.5	2.5
13	390	7.6	210	4.8	—	—	8.6	2.5
14	360	8.7	205	4.6	—	—	4.9	2.7
15	350	>8.8	210	4.4	—	—	4.5	2.8
16	(310)	8.9	< 220	—	—	—	4.5	(2.8)
17	315	8.8	230	—	—	—	4.6	2.8
18	250	>8.4					3.7	(2.7)
19	252	>8.5					4.0	(2.9)
20	282	>7.1					2.5	(2.6)
21	278	>5.4					3.0	(2.9)
22	295	(5.8)						—
23	328	>5.6						—

Time: 35.6°E.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

NBS-D-3
Form adopted June 1946

TABLE 73

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

h'F2 (Characteristic) Km (Unit) October (Month) 1954

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W., J.W.P., J.J.S.

Calculated by: E.J.W., J.W.P., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	330	300	290	(290)S	S	S	260	250	L	460K	590K	490K	[480]SK	460K	400K	370K	300K	250K	240K	250K	270K	(290)SK	[300]SK	(320)SK
2	360K	330	280	S	S	S	240	240	250	300	290	280	300	300	310	300	270	250	220	240	240	280	270	300
3	330	(330)S	(310)S	(320)S	[310]S	300	260	[270]L	280H	360	[390]L	420HK	440K	400K	380K	330K	310K	270K	230K	260K	270K	300K	320K	300K
4	270	270	[280]S	290	290	290	260	270	260	250	310	300	320	310	300	270	270	250	220	210	250	280	280	290
5	(340)S	(330)S	(300)S	(290)S	(300)S	270	240	230	240	250	280	270	270	(290)L	300	270	260	250	210	210	220	(260)S	(270)S	(280)S
6	(310)S	(300)S	(280)S	(290)S	(290)S	(240)S	(270)S	270	280	340	300	360	380	330	310	300	280	250	220	230	270	300	300	290
7	(300)S	(290)S	(300)S	(290)S	270	270	250	240	270	280	280	300H	320	290	300	290	260	240	210	220	240	250	270	290
8	300	250	280	270	270	250	250	230	270H	250H	290	300	300	290	300	270	260	230	220	230	240	240	240	260
9	270	(280)S	280	(270)S	270	(270)S	230	220	240	260	270	280H	270	270	270	270	(240)L	230	210	230	250	250	270	280
10	280	280	260	260	(260)S	(230)S	250	230	(240)L	260H	250	280H	260	280	280	270	250	220	200	220	250	270	280	300
11	290	280	270	250	240	(270)S	240	230H	300	270H	280	280	270	270	260	270	260	230	210	210	240	(270)S	280	280
12	270	270	250	270	270	(260)S	240	230	250	250	250	270	260	270	260	260	250	230	200	220	240	(270)S	260	270
13	270	270	260	250	260	250	240	220	250	240	240	270	290H	270	270H	240	240	220	200	230	230	240	250	250
14	270	260	260	260	260	240	250	220	230	230	250	[260]A	270	280	270	250	240	230	200	230	230	240	240	250
15	260	(260)S	(260)S	(260)S	(260)S	250	230	220	(220)L	240	250	250	250	260	260	[260]C	240	220	210	240	240	250	250	(250)S
16	(250)S	(260)S	250	(260)S	(250)S	(260)S	250	230	250	230	280	270	300	290	270	260	250	220	210	220	(250)S	(280)S	(270)S	(260)S
17	(270)S	(270)S	(260)S	250	(230)S	(240)S	230	230	250	260H	280	250	270	260H	280	250	230	220	220	230	260	280	270	320
18	290	300	(280)S	(300)A	290	(290)S	280	250	(250)L	[300]M	340	360	320	300	270	280	250	230	230	250	250	300	300	270
19	(340)S	320	310	300	(320)S	[310]S	300	250	250	300F	290F	300F	330	300	290	280	260	240	230	230	230	260	280	(270)S
20	280	280	270	(250)S	(300)S	(300)S	(270)S	240	310	290F	370	360	310K	340K	300K	290K	260K	240K	220K	230K	AK	SK	SK	SK
21	(310)S	(340)S	(300)S	(280)S	(260)S	(270)S	(240)S	220	240F	260	280	310	300	300	270	260	250	220	220	240	270	260	270	250
22	290	290	270	260	300F	280	280	240	240	280	260	280	290	300	300	290	250	220	220	230	(220)S	(320)A	270	290
23	280	(280)S	240	260	S	S	S	250	350	G	(380)S	440K	360K	390K	430K	330K	310K	260K	(220)SK	220K	(290)SK	(240)SK	(290)SK	[280]AK
24	270K	SK	SK	SK	(340)SK	(300)SK	[290]SK	280K	GK	GK	SK	GK	430K	460K	[420]SK	380HK	370HK	270K	300K	(290)SK	SK	EK	EK	EK
25	EK	EK	EK	EK	EK	EK	SK	240K	290K	270K	280K	250K	250	250	250	250	240	220	220	240	230	250S	[280]S	(320)S
26	S	S	S	S	S	S	S	240	240	250	270	270	280	290	260	250	220	210	220	230	250	(290)S	(340)S	(330)S
27	(320)S	(310)S	(310)S	(330)S	(350)S	S	S	230	250	250	260	[270]L	280	280	250	250	240	220	220	220	(300)S	[300]S	(300)S	(300)S
28	(330)S	300	(280)S	280	270S	(270)S	320	230	(240)L	270	270	270	280	280	270	250	[230]C	220	(240)C	C	C	C	C	C
29	(310)S	S	S	260	(280)S	(250)S	C	C	240	250	250	250	260	270	260	[illegible]	240	220	220	240	250	(280)S	(300)S	300
30	(270)S	(250)S	250	230	(250)S	(280)S	[260]S	230	240	250	300	250	260	260	250	250	230	220	210	220	(240)S	(270)A	(280)S	(280)S
31	(280)S	(280)S	(250)S	250	240	250	240	220	220	240	260	280	280	270	260	240	240	220	210	240	(300)S	(270)S	(300)S	(280)S
Median	290	280	280	270	(270)	(270)	250	230	250	260	280	280	290	290	270	270	250	230	220	230	250	270	280	280
Count	30	28	28	28	27	26	26	30	30	31	30	31	31	31	31	31	31	31	31	30	28	29	29	29

04.60

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

GPO 83-46049

TABLE 74

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

IONOSPHERIC DATA

NBS-D-3
Form adopted June 1946

foF2 (Characteristic), Mc (Unit), October (Month), 1954

Observed at Washington, D. C.

Lat 38.7° N, Long 77.1° W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: E. J. W., J.W.P., J. J.S.

Calculated by: E. J. W., J.W.P., J. J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.2 F	(2.2) PS	(2.2) S	(1.9) S	(1.6) JS	(1.6) JS	2.6 F	3.3 F	3.7	4.0 K	4.1 K	4.3 K	K(4.1) JS	4.7 K	4.7 K	4.7 K	4.7 K	4.2 K	3.6 K	3.1 K	2.4 K	2.1 K	K(2.1) JS	K2.1 FS
2	(2.2) FK	(1.9) FS	(2.1) FS	(1.8) JS	(1.9) JS	S	(2.9) F	4.3	4.8	5.1	5.6	5.8	5.5	5.5	5.3	5.6	5.4	5.5	4.7	4.3	3.6	3.3	2.8	(2.7) S
3	(2.4) S	(2.3) S	2.2	(2.1) JS	(2.3) JS	(2.1) S	2.8 S	3.7 S	4.1 H	4.2	4.3	4.5 HK	4.7 K	4.9 K	4.9 K	5.0 K	4.8 K	4.5 K	K(4.5) SP	3.7 K	3.4 K	K(3.3) PS	2.9 K	2.7 K
4	(2.8) FS	2.0	1.8 F	(2.0) FS	2.1 FS	(2.4) FS	2.8 F	4.6	5.4	5.4	5.5	5.7	5.9	6.2	6.6	6.2	5.6	6.0	5.8	(4.4) PS	(3.2) S	(2.6) FS	2.4 FS	2.4
5	2.1	2.0	2.1	2.1	2.2 F	2.3 S	3.1	4.7	5.2	5.7	5.8	6.0	6.3	5.7 H	6.2	6.7	6.5	6.7	6.4	4.8	3.6	(2.7) S	(2.6) PS	2.4
6	2.3	(2.3) S	2.4	2.4	(2.4) PS	(2.0) PS	(2.5) PS	4.0	4.7	5.0	5.3	5.3	5.5	5.7	5.7	5.5	5.4	(5.1) S	5.0	3.7	2.8	2.4	(2.5) S	2.3
7	2.2	2.2	(2.2) PS	(2.3) PS	2.3	2.4	2.9 F	4.2	5.2	5.1	5.6	5.5 H	6.0	6.2	6.1	6.4	6.4	6.1	5.4	4.6	3.4	2.7	2.5	2.4
8	2.5	2.6	2.7	2.7	2.7	(2.6) S	3.0	4.3	5.4 VH	5.6 H	5.4	5.6	6.2	6.2	5.9	6.3	6.3	6.2	5.4	5.0	4.7	3.9	3.4	2.9
9	2.9	2.9	3.0	2.8	2.8	(2.7) S	3.0	4.2	(5.0) S	5.3	5.6	5.8 H	6.0	6.2	6.1	5.6	5.6	5.7	4.8	3.8	3.6	3.1	3.1	2.9
10	2.7	2.7	2.7	2.6	(2.8) S	(2.5) PS	2.8	4.8	(5.4) S	6.3 H	6.4	6.3 H	6.4	6.6	6.3	6.3	6.4	6.4	(5.2) PS	4.2	3.2	2.8	2.8	2.8
11	2.8	(2.9) S	2.9	(2.7) PS	2.7	(2.5) PS	2.8	4.7 H	5.3	5.8 H	5.7	6.1	6.2	6.3	6.1	6.7	6.1	(5.9) S	5.2	3.8	3.2	2.8	2.8	2.9
12	2.9	2.7	(2.7) S	2.3	(2.3) S	(2.1) S	2.9	4.8	5.3	5.6	5.7	6.3	6.2	6.7	6.6	6.7	6.4	6.2	5.2	(3.6) PS	(2.8) PS	(2.7) FS	(2.8) PF	F S
13	F S	F S	F S	F S	(3.1) PF	(2.9) JF	(3.3) FS	4.8	5.7	6.2	6.0	6.3	6.7 H	7.2	7.1 H	7.2	7.0	6.4	5.2	4.2	3.6 S	3.4	3.4	(3.3) JS
14	2.9 FS	3.4 F	(3.3) FS	3.1 FS	(3.2) JS	2.6 FS	(2.5) FS	5.1	6.3	6.1	5.8	[6.2] A	6.6	7.1	7.5	7.8	7.4	7.0	5.8	4.6	4.4	3.8 FS	3.4 FS	3.4 S
15	3.1 FS	3.0 FS	(2.9) FS	3.0	3.0 H	2.6	3.0	(5.1) S	5.1	6.3	7.6	7.2	7.0	7.0	6.8	[7.1] C	7.0	6.8	5.0	3.5	3.3	3.0	2.9	2.7
16	2.6	2.5	2.5	2.4	2.4	2.3	(2.7) SH	4.2	4.9	5.0	5.6	6.6	6.6	7.6	7.4	6.2	5.5	5.4	4.6	3.5	3.0	2.8	3.1	3.0
17	2.8	2.9	2.9	2.8	2.6	2.3	(2.6) PS	4.4	5.8	6.0 H	6.3	6.8	7.1	7.0 H	6.7	6.8	6.2	5.7	5.3	4.2	3.3	(3.4) S	3.2	2.8
18	2.9	2.7	2.8	2.4	2.2	(1.9) S	2.3	4.0	4.1	[4.6] H	5.1	5.4	6.3	6.3	5.6	5.0	5.4	4.8	4.3 F	(3.8) PS	3.1 F	2.3 F	(2.3) FS	(2.2) F
19	(2.2) F	(2.0) F	(2.0) FS	(2.1) FS	(1.9) FS	[2.0] S	(2.2) FS	4.0	4.5 F	5.1 F	5.1 F	5.2 F	5.4 F	5.6	5.7	5.6	5.2	5.0 F	(4.5) PS	4.0	3.4	(3.1) JF	(3.0) JF	2.9
20	(2.9) PF	2.9 F	2.8 F	(2.6) PS	2.2 JS	(2.2) JS	2.3	3.6	4.3	(4.5) F	4.5 F	4.6 F	5.0 FK	5.0 FK	5.4 K	5.1 FK	5.2 K	4.8 FK	K(4.3) PS	(3.1) FK	[2.0] AK	K(1.5) JS	S AK	S AK
21	(2.3) JS	(2.3) PF	[2.3] FS	(2.3) PF	2.4 S	2.3 S	(2.5) PS	3.9 F	4.8 FS	4.7	5.1	5.0	5.5	5.5	6.0	5.6	5.6	5.2	4.1	3.5	(2.9) JF	(3.0) PS	(3.3) JS	(3.1) S
22	(2.7) JS	(2.8) JS	(3.0) JS	(3.0) JS	(2.6) JS	(2.1) F	2.3 F	4.2 F	5.5	5.3	5.6	5.4	5.8	5.8	6.4	6.7	7.3	6.1	5.6	(4.5) PS	(3.7) PS	(3.1) FS	(2.8) JF	3.0
23	3.1 F	3.0	2.7 S	2.2	(1.8) S	(1.7) JS	(1.9) PA	3.2	3.8	< 3.5 G	4.2 H	4.2 K	4.4 K	4.5 K	4.4 K	4.8 K	5.2 K	5.4 K	4.5 K	3.9 K	(3.6) SK	(3.6) CK	K3.4 JS	3.7 K
24	3.2 K	K(1.9) JF	K(2.0) PF	K(1.9) PF	2.0 K	K(2.2) PF	K(1.8) PS	3.0 K	< 3.3 GK	< 3.5 GK	K(3.9) JS	< 3.6 GK	4.3 HK	4.0 K	K(3.7) JS	K(3.8) PS	3.5 HK	3.2 K	2.5 K	2.2 K	(1.8) SK	< 1.0 EK	< 1.0 EK	< 1.0 EK
25	< 1.0 EK	< 1.0 EK	< 1.0 EK	< 1.0 EK	< 1.0 EK	< 1.0 EK	F SK	3.7 K	4.6 K	5.8 K	6.0 FK	7.4 K	7.3	6.9	6.3	5.6	5.8	5.3	4.1	3.5 FS	3.3 F	(2.1) F	1.8 F	(1.9) S
26	(1.9) FS	[1.9] AS	1.9 FS	A S	A S	F S	(1.8) FS	3.8	4.9	5.2	5.6	6.1	5.7	6.8	7.4	7.0	(6.0) PS	4.9	4.0	3.1 F	2.2 F	2.0 F	1.9 F	1.9 F
27	1.9 F	1.9 F	1.9 F	1.9 FS	2.0	[1.8] S	(1.7) JS	4.3	5.2	5.9	5.7	5.7	6.5	6.8	6.7	6.0	6.0	5.6	4.5	3.3 F	2.2 F	(1.9) FS	(2.1) FS	(2.0) FS
28	(2.0) FS	2.3 F	(2.3) FS	(2.2) FS	(2.2) FS	(1.9) FS	(1.9) SF	3.7	4.1 F	4.9	5.1	5.0	6.0	5.8	5.9	5.8	[5.3] C	4.8	(3.8) C	C	C	C	C	C
29	(2.5) PS	A S	A S	2.4	(2.3) S	(2.2) PS	C	C	4.9	5.1	5.5	5.6	6.0	6.2	5.9	6.0	5.7	5.8	3.8 FS	(3.5) FS	(2.9) FS	2.3 FS	2.6 FS	3.3 FS
30	3.1 FS	3.0 FS	3.1 FS	2.6 FS	2.1 S	2.0 S	(1.9) S	4.0	5.2	5.8	5.4	6.2	6.6	6.8	6.1	6.2	5.6	5.3	4.3	3.6 FS	2.6 S	2.3	(2.1) AS	(2.0) AS
31	(2.1) PS	2.3	(2.8) PS	(3.0) PS	(2.9) PS	(2.5) PS	2.3 S	4.1	5.2	6.0	5.8	6.0	7.6	8.0	8.4	7.7	7.0	6.7	4.4	3.4 F	2.7 F	2.4 F	2.4	2.3
Median	2.6	2.3	2.5	2.4	2.3	(2.2)	2.6	4.2	5.0	5.3	5.6	5.7	6.0	6.2	6.1	6.2	5.7	5.6	4.6	3.8	3.2	2.8	2.8	2.7
Count	30	29	29	29	30	29	29	30	31	31	31	31	31	31	31	31	31	31	31	30	30	30	29	28

04.60

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

GPO 83-46049

TABLE 75

NBS-D-3
Form adopted June 1946

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

foF2 (Characteristic) . Mc (Unit) October (Month), 1954

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Scaled by: E.J.W., J.W.P., J.J.S.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

Calculated by: E.J.W., J.W.P., J.J.S.

Day	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330
1	(2.1)PS	(2.1)JS	(1.9)JS	(1.9)JS	[1.6]S	(1.8)FS	3.1	3.7F	<3.6G	4.2K	4.2K	4.3K	4.3K	4.7K	4.8K	4.7K	K(4.4)SP	4.0K	3.3K	2.8K	2.4K	K(2.0)FS	K1.9FS	2.2FK
2	(2.2)F	(2.0)FS	(1.9)FS	(1.9)JS	S	S	3.7	4.7	5.2	5.4	5.7	5.6	5.5	5.5	5.6	5.5	5.5	5.3	4.4	4.2	3.2	3.1	2.8	2.6
3	2.3	(2.3)JS	2.1	2.0	(2.1)JS	(2.1)JS	3.3	4.0	4.3	4.3	[4.4]S	4.5HK	4.9K	4.9K	5.3K	4.8K	4.9K	4.7K	3.8K	3.3K	3.7K	2.8K	3.1K	2.8
4	(2.6)FS	(1.8)JS	1.9	2.0FS	2.2FS	2.2F	3.9	5.3	5.9	5.4	5.6	5.5	6.1	6.6	6.3	5.9	5.5	6.0	(5.1)PS	(3.1)S	(2.8)FS	(2.4)S	(2.4)PS	(2.2)S
5	1.9	2.0F	2.0	2.1	2.2	2.3	4.2	5.0	5.6	5.7	5.6	6.1	5.8	5.8	6.5	6.5	6.4	6.9	5.5	4.0	3.0	2.6	(2.5)JS	2.3JS
6	2.3	2.4	2.4	(2.4)JS	(2.0)FS	(1.9)JG	3.6	4.3	4.6	5.4	5.0	5.6	5.9	5.7	5.5	5.4	5.3	5.2	4.3	3.1	(2.5)PS	2.4	2.3S	2.3FS
7	2.2JS	(2.2)JS	2.2	2.3	(2.4)S	2.5	3.7	4.8	5.3S	5.4	5.5	5.4H	6.0	5.8	6.3	6.4	6.3	5.8	4.9	4.2	3.2	2.4	2.4	2.4
8	(2.6)JS	2.7	2.7	2.7F	2.7	2.4	3.8	5.0H	5.7	5.2	5.5	5.7	6.4	6.1	6.4	6.1	6.5	5.8	5.2	4.7	4.3	3.8	3.0	2.9
9	2.9	2.8	2.9	2.8	2.8	2.7	3.6	4.6	5.2	5.6H	5.8	5.8	6.2	5.7	5.7	5.8	5.7	5.2	4.4	3.8	3.2	3.1	3.0	2.9
10	2.7	2.6	(2.7)S	2.7	2.6JS	(2.2)JS	3.9	5.0	6.0	6.4H	6.1	6.3	6.1H	6.6	6.1	6.4	6.4	5.8	4.5	3.5	2.9	2.7	2.8	2.8
11	2.9	2.9	2.8	2.8	(2.5)S	2.4	3.8	4.7	5.8	5.7H	5.8H	5.7	6.3	6.2	6.1	6.6	5.9	5.6	4.6	3.2	2.9	2.7	2.8	2.9
12	2.8	2.8	2.4	2.3	2.3	2.1	3.9	5.0	5.6	5.7	6.0	6.0	6.3	6.7	6.6	6.7	6.2	5.9	4.3	(3.4)PS	[3.0]A	(2.8)FS	(2.7)PF	FS
13	FS	FS	(2.4)PF	FS	FS	(2.9)JS	4.2	(5.1)JS	6.4	6.2	6.2H	6.4	6.9	7.1	7.4	7.0	6.8	6.1	4.7	4.2JS	3.8	3.4JS	(3.2)JS	(3.2)JS
14	3.2	3.2FS	(3.2)FS	(3.3)JS	2.9FS	2.3F	4.2F	5.5	6.4	6.0	6.0	6.8	6.8	7.6	7.5	7.4	7.0	6.6	4.9	4.4	3.9	3.6	3.2	3.2
15	3.1FS	3.1	3.0	3.1	2.6	2.4H	3.9	5.1	6.6	6.8	7.5	7.6	7.2	7.0	7.2	7.0	7.0	6.0	4.3	[3.4]C	3.2	2.9	2.9	2.7
16	2.5	2.6	2.5	2.4	2.4	2.5JS	3.7	4.4	5.1	5.4	6.3	6.8	7.0	7.4	6.8	5.8	5.5	5.4	4.4	3.4	2.9	3.0	3.1	2.7
17	2.8	2.9	2.7	2.7	2.4	2.4	3.5FS	5.3	(5.8)JS	6.4	6.7	6.7	7.1	6.9	6.8	6.4	6.0	5.3	4.8	4.0	3.5	3.2	2.9	2.9
18	2.8	2.8	2.3	2.2	(2.1)S	2.1	3.1	4.0	4.8	[4.8]H	4.9F	5.7	6.2	6.3	5.2	5.1	5.1	4.7F	4.1F	3.6	2.6F	2.2F	(2.1)F	(2.1)F
19	(2.3)F	2.2F	(1.9)FS	(1.9)FS	S	S	3.2	4.2F	4.8	5.0F	5.5F	5.2F	5.6	5.7	5.6F	5.4F	5.2	5.0F	(4.4)JS	(3.7)PS	(2.9)FS	(2.9)PF	(2.9)JS	(2.5)JF
20	(3.0)PF	2.8F	2.8	2.2	2.2	(2.0)JS	3.1	3.9	(4.5)F	(4.2)F	(4.6)F	4.9F	5.0FK	5.2FK	5.2K	5.2FK	5.0K	4.7FK	3.7K	2.8SK	K(1.7)SJ	SK	ASK	AS
21	(2.3)FS	FS	FS	(2.3)S	(2.3)PS	(2.2)PS	3.6S	4.4FS	(5.0)S	5.0S	5.0	5.2	5.4	5.6	5.8	5.5	5.3	4.6	3.8	3.2F	2.9	(3.1)JS	(3.3)JS	(3.0)JS
22	(2.8)JS	(2.9)JS	(3.1)JS	(3.0)JS	(2.1)F	2.1F	3.4F	5.0	5.0	5.4	(5.5)PS	5.6	5.8	6.0	6.6	7.1	7.0	5.7	4.7JS	3.8	2.9	(2.8)JF	(2.8)PF	3.2JA
23	3.0	2.9	(1.9)PF	[1.8]A	(1.8)JS	[1.8]A	2.8	3.5	(3.9)PS	4.1H	(4.3)PS	4.2HK	4.2K	4.5K	4.7K	4.9K	5.2K	5.0K	4.3K	[3.8]CK	[3.6]CK	3.5K	3.6K	3.5K
24	2.3K	K(1.8)FS	K(2.0)JF	K(1.9)JF	K2.0JF	K1.8JF	2.5K	3.3FK	<3.4GK	3.9K	<3.7GK	<3.7GK	(4.0)SK	4.0K	K(3.7)JS	3.5K	3.4K	2.9K	2.4K	2.0K	AK	<1.0EK	<1.0EK	<1.0EK
25	<1.0EK	FSK	<1.0EK	<1.0EK	<1.0EK	<1.0EK	3.2K	4.1K	5.3K	5.6K	6.8K	7.0	7.0	6.2F	5.8	5.7	5.5	4.9	3.6F	3.5F	2.7F	1.8F	[1.8]AS	(1.8)FS
26	(1.9)FS	AS	FS	AS	S	S	2.9	4.5	4.9	5.4F	5.5	5.6	[6.2]C	6.9	7.0	6.7	5.3	4.5	3.5F	2.8	2.2P	1.9	1.9F	1.9F
27	2.0F	1.9	1.9F	1.9F	[2.0]S	(2.0)S	(3.0)FS	4.3	5.4	5.5	5.4	6.3	6.6	6.9	6.3	5.8	5.8	5.4	3.7F	2.4	2.0F	1.9FS	(2.0)FS	(2.0)FS
28	2.1F	2.3F	2.4FS	2.4FS	2.2FS	(1.9)S	3.0F	4.2	4.5F	5.0	5.2	5.4	5.8F	5.7	6.0	5.5	5.1	4.3F	(3.7)C	C	C	C	C	C
29	2.4	[2.5]S	2.6PS	2.2	(2.2)JS	C	C	4.7FS	4.9	5.4	5.4	5.8	5.8	6.0	5.8	5.8	5.8	4.9SF	(3.7)FS	(3.0)FS	2.4FS	[2.4]AS	(3.0)FS	(3.0)FS
30	3.2	3.0	(2.9)FS	2.1FS	2.0FS	[2.0]S	3.0	(5.2)PS	5.6	5.6	6.0	6.4	6.8	6.6	6.2	6.0	5.4	5.0	4.0FS	3.0FS	(2.5)A	[2.2]A	[2.0]AS	(2.0)FS
31	(2.2)S	(2.5)FS	(3.0)PS	(3.0)PS	2.8F	2.3	3.1	4.8	5.8	5.8	6.3H	6.9	8.0	8.2	8.3	6.9	6.8	5.2	3.7	3.1F	2.6FS	2.3	[2.4]A	(2.3)A
Median	2.4	2.6	2.4	2.3	2.2	2.2	3.6	4.7	5.2	5.4	5.5	5.7	6.1	6.1	6.1	5.8	5.5	5.2	4.3	3.4	2.9	2.7	2.8	2.6
Count	30	27	29	29	27	27	30	31	31	31	31	31	31	31	3.1	31	31	31	31	30	29	29	29	28

04.60

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

GPO 83-480 41

TABLE 76

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

NBS-D-3
Form adopted June 1946

h'F1 (Characteristic), Km (Unit), October (Month), 1954

Observed at Washington, D.C.

Lat. 38.7°N, Long. 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W., J.W.P., J.J.S.

Calculated by: E.J.W., J.W.P., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								Q	230	220 HK	200 HK	200 K	210 K	200 HK	230 K	240 K	220 K	240 K						
2								230	220	210 H	200	190	180 H	200 H	190 H	210	230	240						
3								240	210 H	200 H	190	180 HK	190 HK	220 K	200 HK	220 K	230 HK	240 K						
4								240	230	220	200 H	200	190 H	190 H	200 H	220	230	250						
5								230	210	210	200	200	190	200	210	230	230	220						
6								210	220	220 H	180 H	190 H	180 H	200	210 H	230 H	220	250						
7								220	220 H	220 H	200 H	200	180 H	190	220	200	250	220						
8								220	230 H	220	200 H	190 H	180 H	210 H	230 H	220	220	230						
9								Q	220	(200) A	200 H	190	200 H	180 H	180 H	210	220	Q						
10								220	220	210 H	200	180 H	170 H	170 H	220	200 H	240	240						
11								Q	200 H	200 H	200	190 H	180 H	180 H	220	210	210	Q						
12								Q	220	220	200	180	190 H	220	210 H	210 H	230	(230) S						
13								Q	220	220	200 H	180 H	230	180	210	210	220	210						
14								200	220	210	(200) A	[190] A	180	200	210	230	230	Q						
15								230	200	220	210 H	180 H	220	200	200	[240] C	230	Q						
16								230	230	200	200	220	180 H	240	210	220	230	230						
17								220	240	210 H	200	200	180 H	180 H	180 H	220 H	230	Q						
18								Q	220	[210] M	200	190	210	210 H	220 H	200 H	240	Q						
19								Q	200 H	220 F	200 H	180 H	200 H	190 H	220	230	230	Q						
20								Q	240	210	190	180	(220) AK	230 K	210 HK	230 K	230 K	240 K						
21								Q	210	210	200	180	210	230	(200) A	210	220	Q						
22								Q	210	200 F	190 H	200 H	200 H	190 H	210 H	220 H	230	Q						
23								Q	220 H	210	200 H	200 K	200 HK	210 K	230 K	240 K	250 K	260 K						
24								Q K	230 FK	220 HK	220 K	220 K	230 HK	230 HK	240 K	230 HK	240 K	Q K						
25								Q K	240 K	220 K	190 K	180 HK	200	210	220	220	230	Q						
.26								Q	220	[210] A	200	190 H	200	220	230	230	230	Q						
27								Q	230	220	200	180	200	200 H	210	230	230	Q						
28								Q	210	200	200	190	170 H	180 H	210	220	230	Q						
29								Q	230	220	200	200	180	190	220	230	220	Q						
30								Q	230	210	200	(180) A	190 H	210 H	220	210	220	Q						
31								Q	230	210	190 H	210	210 H	220 H	230	220	230	Q						
Median								220	220	210	200	190	190	200	210	220	230	240						
Count								12	31	31	31	31	31	31	31	31	31	14						

04.60

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

GPO 63-46049

NBS-D-3
Form adopted June 1946

TABLE 77

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

foFl (Characteristic), Mc (Unit), October (Month), 1954

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W., J.W.P., J.J.S.

Calculated by: E.J.W., J.W.P., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								Q	3.5	3.7 HK	3.9 HK	3.9 K	4.0 K	3.9 HK	3.9 K	3.8 K	3.5 K	L K						
2								L	L	4.1 H	4.2	4.2	4.3 H	4.2 H	4.2 H	3.9	L	L						
3								L	3.6 H	3.8 H	4.1	(4.0) SK	4.0 HK	4.0 K	4.0 HK	3.7 K	3.6 HK	L K						
4								L	3.7	(4.0) L	(4.2) H	4.2	4.3 H	4.2 H	(4.1) H	(3.8) L	L	L						
5								L	L	(3.5) L	4.0	4.1	4.2	4.1	(4.0) L	(3.8) L	L	L						
6								L	(3.4) L	3.9 H	4.0 H	4.1 H	4.2 H	4.2	4.0 H	3.9 H	3.5	L						
7								L	3.4 H	3.9 H	4.1 H	4.3	4.2 H	4.2 H	4.1	4.0	L	L						
8								L	(3.6) L	(3.9) L	(4.2) H	(4.2) H	4.2 H	4.1 H	(4.0) L	3.9	L	L						
9								Q	L	L	3.9 H	4.2	4.3 H	(4.1) H	3.8 H	L	L	Q						
10								L	L	4.1 H	4.2 H	4.3 H	4.1 H	4.2 H	4.2	L	L	L						
11								Q	3.7 H	4.1 H	4.2	4.3 H	4.3 H	4.2 H	[4.0] L	3.9	L	Q						
12								Q	L	L	(4.1) L	4.2	(4.2) H	(4.1) L	(4.0) H	(3.5) H	L	L						
13								Q	L	3.8	4.1 H	4.0 H	4.3	4.3	4.2	L	L	L						
14								L	L	3.9	4.0	[4.1] A	4.2	4.2	4.0	L	L	Q						
15								L	L	4.0	4.1 H	4.2 H	L	L	L	C	L	Q						
16								L	L	3.8	4.0	4.2	(4.1) L	4.2	4.0	(3.8) L	L	L						
17								L	L	4.0 H	4.2	4.1	[4.1] L	4.1 H	L	L	L	Q						
18								Q	L	M	3.9	4.0	4.0	4.0 H	3.9 H	3.6 H	L	Q						
19								Q	L	(3.7) L	3.9 F	4.1 H	4.2 H	(4.0) L	3.8	(3.5) L	L	Q						
20								Q	3.4	3.5 F	3.7 F	3.9 F	4.1 FK	4.0 FK	(3.8) HK	3.7 K	L K	L K						
21								Q	L	(3.8) L	3.8	4.0	4.1	4.1	3.9	(3.7) L	L	Q						
22								Q	L	(3.7) L	3.9 H	4.1 H	4.0 H	(4.0) H	(3.8) H	(3.6) L	L	Q						
23								Q	(3.2) H	3.5	3.7 H	3.8 K	3.8 HK	3.8 K	3.7 K	3.6 K	L K	L K						
24								Q K	3.3 FK	3.5 HK	3.7 K	3.6 K	3.7 HK	3.6 HK	3.5 K	3.5 HK	3.3 K	Q K						
25								Q K	L K	3.7 HK	3.9 K	3.9 HK	3.9 F	L	L	L	L	Q						
26								Q	L	A	3.9	4.0 H	4.1	4.2	3.9	L	L	Q						
27								Q	L	3.8	3.8	3.9	4.1	(4.2) H	3.9	L	L	Q						
28								Q	L	3.7	3.9	3.9	3.8 H	3.8 H	3.9 H	3.5	L	Q						
29								Q	L	3.8	3.9	4.0	4.1	(3.9) L	L	L	L	Q						
30								Q	L	3.6	4.2	[4.2] L	4.1 H	4.0 H	(3.9) L	L	L	Q						
31								Q	L	L	3.8 H	3.8	4.1 H	4.0 H	3.9	L	L	Q						
Median								—	3.4	3.8	4.0	4.1	4.1	4.1	3.9	3.7	—	—						
Count									10	26	31	31	30	29	27	19	4							

04.60

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

GPO 83-46049

NBS-D-3
Form adopted June 1946

TABLE 78

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

h'E (Characteristic), Km (Unit), October (Month), 1954

Observed at Washington, D.C.

Lat. 38.7°N, Long. 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W., J.W.P., J.J.S.

Calculated by: E.J.W., J.W.P., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								$(120)^{S}$	110^{H}	110K	100K	100K	100K	100^{H}_{K}	100K	110K	110K	S K						
2								110^{H}	110	110	110	100	100	100	100	100	110	120						
3								120	100^{H}	110	100	100^{H}_{K}	110^{H}_{K}	100K	110K	110^{H}_{K}	110K	120K						
4								110^{H}	110^{H}	110	100	100	100	100	100^{H}	100	110^{H}	130^{H}						
5								120	110^{H}	100^{H}	100	100	100^{H}	100^{H}	100	100	110	$(120)^{S}$						
6								$(120)^{S}$	110	$(110)^{A}$	100	100	110^{H}	100	110	110	110	$(120)^{S}$						
7								120	110^{H}	110	100	100	$(100)^{A}$	$(100)^{A}$	100^{H}	100	120	$(130)^{S}$						
8								A	110	110	110	110^{H}	100	110	110^{H}	110	110	$(120)^{S}$						
9								$(130)^{S}$	110	100	100	100	100^{H}	100	110	110	110^{H}	A						
10								S	110	100	100	100	100^{H}	100	100	100	110	S						
11								120^{H}	$(110)^{A}$	100	100	100	100	100^{H}	100	100^{H}	110	S						
12								$(120)^{S}$	110	100	100	100^{H}	100	100	100^{H}	110	120	S						
13								$(130)^{S}$	110	100	100	100	100	100	100	100^{H}	110	S						
14								S	110	100	100	100	100	100	100	100^{H}	100	S						
15								120	110	100	100	100	100	100	110	$[100]^{C}$	110	$(120)^{S}$						
16								S	110	100	100	100	100	100^{H}	100	100	A	S						
17								$(100)^{S}$	100	110	110	100	100	100	100	110	120	S						
18								S	110	$[110]^{M}$	110	110	100	100	100	110	A	S						
19								120	110^{H}	110^{H}	110^{H}	$(100)^{A}$	100	100	100	110	120	S						
20								S	120^{H}	110	110	100	100K	100K	100K	100K	120K	S K						
21								S	100^{F}	100	100	110	100	100	100	100	120	S						
22								130	100^{H}	100	100	100	100^{H}	$[100]^{A}$	110	110	110	S						
23								A	A	A	A	110K	110K	$[110]^{A}_{K}$	110K	110K	120K	S K						
24								$(120)^{S}_{K}$	120K	120K	110^{H}_{K}	110K	110^{H}_{K}	110^{H}_{K}	110K	120K	110^{H}_{K}	S K						
25								$(120)^{S}_{K}$	110^{H}_{K}	110K	110K	110K	100	100	100	$(120)^{S}$	120^{H}	S						
26								S	$(110)^{A}$	110	110	$(100)^{A}$	$(100)^{A}$	$(100)^{A}$	100	$(110)^{B}$	120	S						
27								S	110	110	110	100^{H}	100^{H}	110	110	110	120	S						
28								S	110^{H}	100	100	100	100^{H}	110^{H}	110^{H}	110	C	S						
29								S	120	100	110	100	120	$(120)^{A}$	100	100	100	S						
30								S	110	110	110	110	$(110)^{A}$	110	110	110	110	S						
31								S	110	110^{H}	110	110	110	110	110	110^{H}	120	S						
Median								120	110	110	100	100	100	100	100	110	110	(120)						
Count								17	30	30	30	31	31	31	31	31	28	8						

04.60

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

NBS-D-3
Form adopted June 1946

TABLE 79

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

foE (Characteristic), Mc (Unit), October (Month), 1954

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W., J.W.P., J.J.S.

Calculated by: E.J.W., J.W.P., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								1.7	2.4H	2.6K	2.8K	AK	AK	2.9HK	2.8K	2.5K	2.3K	SK						
2								1.9H	(2.3)P	(2.4)P	2.7	A	A	A	2.8	(2.5)S	(2.4)S	1.8						
3								(1.9)P	2.4H	2.5	2.8	2.9HK	3.0HK	2.9K	2.8K	2.6HK	2.3K	1.8K						
4								1.9H	2.3H	(2.8)S	(2.9)A	3.0	3.0	[2.9]A	2.8H	(2.6)S	2.4H	1.8H						
5								1.7	2.4H	2.6H	A	A	(3.0)H	3.0H	2.9	2.7	2.4	1.7						
6								1.9H	(2.3)S	2.6	2.8	(2.8)P	2.8H	(2.9)P	2.9	2.5	(2.2)S	1.7						
7								1.8	2.3H	2.4	(2.4)P	2.8	(2.9)P	3.0H	2.9H	2.7	2.3	(1.7)S						
8								A	2.3	2.7	2.8	(2.9)H	3.0	2.9	2.8H	2.7	(2.5)P	(1.8)A						
9								(1.8)H	2.4	[2.6]A	2.9	3.0	3.1H	3.0	2.9	2.7	2.4H	A						
10								S	A	2.7	3.0	3.0	3.0H	3.0	2.7	2.6	2.4	S						
11								(1.8)H	A	A	2.9	(2.9)P	(2.7)P	2.8H	2.7	2.5H	2.2	S						
12								(1.7)H	(2.2)S	(2.5)S	2.8	2.9H	3.0	2.9	2.7H	2.7	2.4	S						
13								(2.0)A	(2.5)S	2.7	2.8	(2.9)P	[3.0]A	(3.0)A	2.9	2.7H	2.4	S						
14								S	(2.2)P	A	A	A	A	3.0	2.9	2.7H	2.3	(1.7)S						
15								(1.7)S	(1.9)S	2.6	2.7	2.7	[2.8]A	2.9	2.8	[2.6]C	2.2	(1.7)S						
16								S	2.2	A	A	2.9	(3.0)A	(3.0)A	(2.9)A	2.5	A	S						
17								S	(2.4)A	2.6	2.8	2.8	2.9	2.8	2.8	2.3	2.2	S						
18								S	2.0	[2.4]M	2.7	2.7	2.7	2.8	2.7	(2.4)P	A	S						
19								1.8	2.3H	2.5H	(2.6)H	(2.8)A	[2.8]A	(2.8)P	2.7F	2.5	2.2	S						
20								S	(2.2)H	2.4	(2.5)A	(2.4)A	2.7K	AK	AK	AK	2.2K	SK						
21								S	A	(2.5)A	(2.6)A	2.9	2.9	2.9	A	A	2.0	S						
22								1.8	(2.2)P	2.4	2.5	(2.6)A	2.9H	[2.8]A	2.7	2.5	2.0	S						
23								A	A	A	A	(2.7)AK	2.8K	[2.6]AK	2.5K	2.4K	2.0K	SK						
24								(1.9)SK	2.3K	2.4K	2.5HK	(2.4)SK	2.6HK	2.6HK	(2.4)PK	2.3K	2.1HK	SK						
25								(1.9)SK	2.3HK	2.4K	2.5K	[2.6]AK	2.7	2.7	2.7	2.5	2.1M	S						
26								S	A	(2.2)P	(2.3)P	A	A	A	2.7	2.5	1.9	S						
27								S	1.9	(2.3)P	(2.4)P	2.8H	2.9H	2.8	2.7	[2.3]A	(1.9)P	S						
28								S	(1.9)P	A	A	A	2.9H	2.8H	2.7H	2.5	[2.0]C	S						
29								S	2.0	A	A	3.0	3.0	3.0	2.8	(2.6)P	A	S						
30								S	2.0	A	A	A	3.0	3.0	(2.9)P	2.4	A	S						
31								S	S	2.4H	2.6	2.9	2.9	2.9	(2.8)P	2.5H	(2.2)P	S						
Median								1.8	2.3	2.5	2.7	2.8	2.9	2.9	2.8	2.5	2.2	1.7						
Count								16	25	24	24	24	27	28	29	29	27	9						

04.60

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

GPO 83-46049

TABLE 80

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

NBS-D-3
Form adopted June 1946

IONOSPHERIC DATA

Es (Characteristic), Mc, Km (Unit), October (Month), 1954

Observed at Washington, D.C.

Lat. 38.7°N, Long. 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W., J.W.P., J.J.S.

Calculated by: E.J.W., J.W.P., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.3 100	E	3.9 110	E	E	E	4.3 100 H	3.9 120 H	36 140	37 130	48 110 H	44 110 H	49 100	3.2 130	39 110	38 120	3.2 120	29 110	26 110	E	2.3 110	3.2 100	41 110	2.4 110
2	E	4.1 110	E	E	E	4.6Y 120	4.5H (120) S	(2.9) (110) S	6.0 110	3.7 110	39 110	46 100	5.3 100	3.9 100	G	G	2.4 120	24 120	23 100	E	E	E	E	E
3	19 110	E	E	E	2.1 100	E	2.5 140	4.6 120	G	3.0 120	(6.8)S 100 H	4.8 100	G	G	7.6 110 H	G	G	G	E	E	E	E	E	E
4	E	4.1 120	2.1 130	E	E	E	24 110 H	4.7 110 H	36 130	G	3.5Y 110	3.7Y 120	G	3.1 100	G	G	G	G	E	E	E	E	E	E
5	E	E	38 120	E	4.0 110	8.0 130	(2.0) (120) S	48 130	G	G	5.2Y 100 H	3.1Y 100 H	G	3.6Y 110	G	G	G	2.0 140	E	E	E	E	E	E
6	E	E	E	E	E	E	E	4.2Y 100	3.6Y 100	37 100	G	G	G	G	G	2.9 130	G	2.0 110	E	E	E	E	E	E
7	E	E	E	E	22 110	2.3 110	E	G	G	2.7Y 110	36 100	7.2 100	3.2S 100	74 100 H	3.5 120 H	28 130	2.4 120	G	E	E	E	E	E	E
8	E	E	E	2.4 110	2.4 110	2.9Y 100	44 100	3.0 100	G	G	G	G	G	G	3.0 120	28 130	G	1.9 140	E	E	E	E	E	E
9	E	E	E	24 100	E	E	E	G	G	8.9Y 120 H	74Y 130	42Y 110	G	G	G	G	G	2.7Y 120	E	E	E	E	E	E
10	E	E	E	E	E	E	E	1.8 110	32Y 110	36 120	G	49 110	(3.3)S 100	8.8 120 H	G	G	G	G	E	E	E	E	E	E
11	E	E	E	E	E	E	E	G	46H 110	6.6 110	36 110	35 100	3.7 100	33 100	5.0Y 110	8.0 120	G	1.9 120	E	E	E	E	E	E
12	E	E	E	E	36 100	E	E	G	G	43Y 110	43Y 120 H	G	42Y 120	30 110	3.0 120	G	G	G	E	E	E	3.1 100	E	E
13	23 100	E	E	E	E	3.7 130	3.1Y 100	66Y 120 H	4.5Y 130	47 110 H	41 110 H	37 110	3.8 100	38 100	G	G	(4.1)S 100	28 110 H	E	E	E	3.2 100	2.7 100	2.3 110
14	2.7 100	24 100	2.7 100	2.4 100	E	E	7.0 110	1.7 110	3.9 110	41 100	4.7 100	78 100	7.0 120	G	G	G	G	G	E	E	E	E	E	E
15	E	E	E	E	E	E	37Y 120	G	2.5 110	44Y 100 H	42 110	37Y 110	40 110 H	G	G	C	G	G	E	E	E	E	E	E
16	E	E	E	E	E	E	E	1.8 150	52Y 110	40Y 110	43Y 110 H	G	3.0 100	3.6 120	38 100	G	2.4 100	G	23Y 100	E	E	E	E	24 110
17	E	2.3 100	E	E	E	E	4.1Y 100	G	30 110	G	3.0 120	G	G	G	G	G	3.0 (130) S	G	E	E	E	E	25 110	2.8 110
18	2.5 110	2.5 110	27 110	4.8 100	42 100	E	E	47 140	G	M	2.8 120	29 110	G	36 110	33 110	42 100	3.7 100	3.0 100	31 100	E	1.8 100	E	E	E
19	E	E	E	E	E	7.8Y 120	5.4 110 H	G	24 130	48Y 110	G	37 110	30 100	G	3.0Y 120	G	G	18 140	E	23 120	E	E	E	E
20	2.9 100Y	E	E	E	E	E	E	G	32Y 130	2.7 120	7.0 120	28 110	49Y 100	3.5 100	35 100	38 100	37 120	1.9 120	29 120	28 100	5.0 110	E	28 110	43 100
21	2.8Y 100	2.4 100	3.7Y 100	3.7 100	2.4 100	2.4 100	22 100	3.7 110	3.1 110 F	38Y 100 H	27 110 H	3.3Y 100 H	30 100	3.8 100	3.7 100	32 100	3.1 140	42Y 110	34 100 H	3.6 100 H	4.2 110	2.4 110	E	E
22	E	E	E	E	E	E	E	3.7Y (140) S	2.4 120 S	30 120	2.8 120	47Y 100 H	G	41Y 100	G	G	G	18 130	34 120	42Y 120	3.4Y 120	42Y 110	E	22 100
23	3.5Y 100	4.3Y 100	2.9Y 100	2.9Y 140	24Y 130	E	7.2 110 H	2.8Y 110	2.1 120	74Y 110 H	48 110	3.2Y 110	G	3.2 110	G	G	G	G	E	E	E	E	E	3.1 130
24	2.5 140	E	E	E	E	70Y 110 H	4.2Y 100 H	2.7Y 130	3.6Y 130	70Y 130	45 120	9.0 110 H	7.8 120	27 120	27 120	G	G	19 120	36 110	6.6Y 120	4.3Y 110 H	4.2Y 110	6.0Y 150	4.0Y 120
25	E	E	E	66Y 100 H	E	E	E	3.6Y 100	47Y 110	25 120	3.0 110	3.7 110	G	G	G	29 120	32 100	24 120	2.3 110	23 100	2.1 90	E	4.6 100	36Y 100
26	2.4 100	3.7 100	7.8 100	3.9 100	2.9 100	E	72 100 H	2.1 110	4.6 110	5.6 100	42 100	3.2 100	27 100	30 100	62Y 120	G	22 120	28 100	3.1 100	E	E	E	27 100	E
27	23 100	E	7.0 120	3.1Y 100	7.2 100	47Y 130	(6.6)S 110 H	G	2.2 120	26 110	29 110 H	29 100	33 100	45Y 110	35 110	2.6 110	2.2 120	G	E	E	E	2.3 100	9.0Y 120	E
28	E	3.1 100	4.1 100	44 100	4.6 100	3.8 100	37 100	37 100 H	66Y 120	3.7 110	27 110	3.3F 110	32 100	G	G	G	G	G	E	C	C	C	C	C
29	9.0 100	66Y 100	40 100	E	E	E	C	C	22 120	3.0 110	30 110	3.0 100	31Y 100	2.9Y 100	G	62Y 110	3.7Y 100	G	45Y 100	E	E	58 110	3.0 110	2.9 110
30	3.0 110	E	29Y 110	30Y 110	E	E	4.7 100	G	2.4 110	4.6 110	3.2 110 H	48 110	33Y 110	G	G	48Y 110	23 110	G	E	E	E	3.1 110	37 110	3.7 110
31	E	28Y 110	E	E	E	E	4.4Y 110	G	G	2.9 120	2.7 120	32 130	8.0 110	66 100	4.2 110	G	2.3 130	G	E	E	E	E	E	76 110
Median	* *	* *	* *	* *	* *	* *	28	2.4	3.0	3.7	3.6	3.5	3.1	3.1	* *	* *	* *	1.8	* *	* *	* *	* *	* *	* *
Count	31	31	31	31	31	31	30	30	31	30	31	31	31	31	31	30	31	31	31	30	30	30	30	30

* * MEDIAN fEs LESS THAN MEDIAN foE, OR LESS THAN LOWER FREQUENCY LIMIT OF RECORDER

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

GPO 83-46049

NBS-D-3
Form adopted June 1946

TABLE 81

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

IONOSPHERIC DATA

(M1500)F2 (Characteristic), ____ (Unit), October (Month), 1954

Observed at Washington, D.C.

Lat 38.7° N, Long 77.1° W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W., J.W.P., J.J.S.

Calculated by: E.J.W., J.W.P., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	1.9F	(2.0)PS	(2.1)S	(2.0)S	JS	JS	2.3F	2.3F	1.9	1.8K	1.6K	1.7K	JSK	1.7K	1.9K	1.9K	2.2K	2.4K	2.2K	2.2K	2.2K	2.0K	JSK	K2.1FS
2	(1.8)FK	(2.1)FS	(2.2)FS	JS	JS	S	(2.3)F	2.4	2.3	2.2	2.3	2.3	2.3	2.3	2.2	2.2	2.3	2.3	2.3	2.1	2.2	2.0	2.1	(1.9)S
3	(2.0)S	(1.9)S	2.0	(1.9)JS	JS	(2.0)S	2.0S	2.1S	2.3H	2.1	1.9	1.9HK	1.8K	1.9K	2.0K	2.1K	2.2K	2.3K	K(2.4)SP	2.0K	1.9K	K(1.9)PS	1.9K	1.9K
4	(2.1)FS	2.3	2.0F	(2.1)FS	2.1FS	(2.1)FS	2.3F	2.2	2.3	2.5	2.2	2.3	2.1	2.1	2.1	2.3	2.3	2.3	2.4	(2.5)PS	(2.3)S	(2.2)FS	2.1FS	2.1
5	1.9	2.0	2.0	2.1	2.1F	2.2S	2.3	2.5	2.5	2.3	2.3	2.4	2.4	2.1H	2.1	2.2	2.3	2.3	2.4	2.5	2.3	(2.1)S	(2.1)PS	2.1
6	2.0	(2.0)S	2.1	2.0	(2.1)PS	(2.4)PS	(2.2)PS	2.4	2.4	2.1	2.3	2.0	1.9	2.1	2.1	2.1	2.3	(2.3)S	2.3	2.2	2.1	2.1	(1.9)S	2.1
7	2.0	2.1	(2.0)PS	(2.0)PS	2.2	2.2	2.3F	2.4	2.4	2.4	2.3	2.0H	2.1	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.2	2.1	2.1	2.0
8	1.9	2.0	2.0	2.0	2.1	(2.3)S	2.3	2.3	2.2VH	2.4H	2.3	2.1	2.2	2.2	2.2	2.4	2.3	2.4	2.3	2.2	2.1	2.3	2.3	2.0
9	2.0	2.0	2.0	2.1	2.0	(2.1)S	2.3	2.4	(2.5)S	2.4	2.3	2.3H	2.4	2.4	2.4	2.3	2.3	2.4	2.3	2.3	2.2	2.1	2.1	2.0
10	2.1	2.1	2.1	2.2	(2.3)S	(2.3)PS	2.3	2.6	(2.4)S	2.3H	2.3	2.0H	2.4	2.1	2.2	2.3	2.4	2.5	(2.3)PS	2.3	2.2	2.1	2.0	2.0
11	2.0	(2.1)S	2.0	(2.0)PS	2.2	(2.1)SP	2.3	2.4H	2.2	2.3H	2.3	2.3	2.3	2.3	2.4	2.3	2.3	(2.4)S	2.4	2.2	2.2	2.1	2.0	2.0
12	2.0	2.1	(2.3)S	2.2	(2.1)S	(2.2)S	2.3	2.5	2.4	2.5	2.4	2.4	2.4	2.2	2.3	2.3	2.4	2.4	2.5	(2.5)PS	(2.3)PS	(2.1)FS	(2.0)PF	FS
13	FS	FS	FS	FS	(2.1)PF	JF	(2.3)FS	2.5	2.4	2.5	2.5	2.3	2.1H	2.3	2.2H	2.3	2.4	2.4	2.4	2.3	2.4S	2.2	2.2	JS
14	2.1FS	2.1F	(2.1)FS	2.1FS	JS	2.2FS	(2.4)FS	2.5	2.5	2.5	2.4	A	2.2	2.2	2.2	2.3	2.3	2.4	2.4	2.3	2.3	2.2FS	2.2FS	2.2S
15	2.1FS	2.0FS	(2.0)FS	2.1	2.2H	2.2	2.4	(2.3)S	2.3	2.5	2.5	2.3	2.3	2.2	2.2	C	2.3	2.4	2.5	2.2	2.2	2.1	2.1	2.1
16	2.2	2.2	2.1	2.2	2.1	2.1	(2.1)SH	2.5	2.4	2.5	2.3	2.3	2.1	2.1	2.2	2.4	2.4	2.4	2.4	2.3	2.0	2.0	2.1	2.1
17	2.0	2.1	2.1	2.2	2.3	2.4	(2.3)PS	2.4	2.4	2.1H	2.2	2.3	2.2	2.2H	2.2	2.4	2.4	2.4	2.3	2.0	2.0	(2.0)S	2.0	1.9
18	2.0	1.9	2.1	2.1	2.1	(2.1)S	2.1	2.4	2.1	M	2.0	2.0	1.9	2.1	2.2	2.3	2.3	2.3	2.2F	(2.2)PS	2.2F	2.1F	(2.1)FS	(2.3)F
19	(2.0)F	(2.1)F	(2.2)FS	(2.1)FS	(2.1)FS	S	(2.2)AS	2.4	2.2F	2.3F	2.3F	2.3F	2.1F	2.2	2.2	2.3	2.2	2.3F	(2.2)PS	2.2	2.3	JF	JF	2.0
20	(2.0)PF	2.1F	2.1F	(2.2)PS	(2.0)JS	(2.0)JS	2.2	2.1	2.3	(2.3)F	2.1F	2.0F	2.2FK	2.1FK	2.3K	2.2FK	2.3K	2.3FK	K(2.2)PS	(2.3)FK	AK	JSK	ASK	ASK
21	JS	(1.9)PF	FS	(2.1)PF	2.1S	2.1S	(2.2)PS	2.3F	2.4FS	2.3	2.4	2.2	2.3	2.2	2.3	2.4	2.3	2.4	2.2	2.2	(2.3)JF	(2.1)PS	JS	(2.2)S
22	JS	JS	JS	JS	JS	(2.2)F	2.3F	2.3F	2.3	2.3	2.4	2.2	2.3	2.2	2.0	2.1	2.3	2.4	2.4	(2.3)PS	(2.1)PS	(2.0)FS	(2.1)JF	2.0
23	2.2F	2.0	2.3S	2.3	(2.0)S	JS	(2.0)PA	2.3	2.1	G	2.0H	1.8K	2.1K	2.0K	1.8K	2.0K	2.1K	2.2K	2.1K	2.2K	(2.1)SK	(2.0)CK	K(1.9)JS	2.0K
24	2.1K	JFK	K(1.9)PF	K(2.0)PF	2.0K	K(2.2)PF	PSK	2.3K	GK	GK	JSK	GK	1.8HK	1.8K	JSK	K(2.0)PS	2.0HK	2.2K	2.0K	2.0K	(2.0)SK	EK	EK	EK
25	EK	EK	EK	EK	EK	EK	FSK	2.3K	2.2K	2.3K	2.2FK	2.4K	2.4	2.4	2.4	2.5	2.3	2.4	2.2	2.3FS	2.3F	(2.3)F	2.1F	(2.1)S
26	FS	AS	1.9FS	AS	AS	FS	(2.2)FS	2.4	2.6	2.3	2.4	2.3	2.3	2.2	2.3	2.4	(2.5)PS	2.5	2.4	2.4F	2.4F	2.3F	2.0F	2.1F
27	2.2F	2.1F	2.2F	2.1FS	2.0	S	JS	2.5	2.4	2.5	2.4	2.1	2.2	2.2	2.3	2.4	2.4	2.3	2.4	2.4F	2.1F	(2.0)FS	(2.1)FS	(2.1)FS
28	(2.0)FS	2.2F	(2.2)FS	(2.2)FS	(2.2)FS	(2.3)FS	(2.2)SF	2.5	2.5F	2.4	2.4	2.4	2.3	2.3	2.3	2.4	C	2.4	C	C	C	C	C	C
29	(2.1)PS	AS	AS	2.2	(2.1)S	(2.2)PS	C	C	2.5	2.5	2.5	2.4	2.4	2.3	2.5	2.3	2.4	2.5	2.3FS	(2.2)FS	(2.1)FS	2.0FS	1.9FS	2.0FS
30	2.1FS	2.1FS	2.1FS	2.3FS	2.2S	2.1S	(2.2)S	2.4	2.5	2.5	2.2	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.3FS	2.2S	2.2	(2.0)AS	(2.1)AS
31	(2.0)PS	2.1	(2.0)PS	(2.0)PS	(2.2)PS	(2.2)PS	2.3S	2.5	2.5	2.5	2.4	2.2	2.1	2.1	2.2	2.3	2.4	2.3	2.0	2.1F	2.1F	2.1F	2.0	2.0
Median	2.0	2.1	2.1	2.1	2.1	(2.2)	2.3	2.4	2.4	2.3	2.3	2.3	2.2	2.2	2.2	2.3	2.3	2.4	2.3	2.2	2.2	2.1	2.1	2.0
Count	26	25	26	26	24	23	27	30	31	30	30	30	30	31	30	30	30	31	30	30	29	27	25	26

04.60

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

GPO 63-46049

TABLE 82

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

NBS-D-3
Form adopted June 1946

IONOSPHERIC DATA

(M3000)F2, ______ (Characteristic) (Unit) October (Month), 1954

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Scaled by: E.J.W., J.W.P., J.J.S.

Lat 38.7°N, Long 77.1°W

75° W. Mean Time

Calculated by: E.J.W., J.W.P., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.9 F	(3.0) PS	(3.1) S	(3.0) S	J S	J S	3.3 F	3.3 F	2.8	2.7 K	2.4 K	2.6 K	J SK	2.6 K	2.8 K	2.9 K	3.2 K	3.5 K	3.2 K	3.2 K	3.2 K	3.0 K	J SK	3.1 FSK
2	(2.7) FK	(3.1) FS	(3.2) FS	J S	J S	S	(3.4) F	3.5	3.4	3.3	3.3	3.4	3.3	3.3	3.2	3.2	3.3	3.4	3.4	3.1	3.2	2.9	3.1	(2.9) S
3	(3.0) S	(2.8) S	2.9	(2.9) JS	J S	(3.0) S	3.0 S	3.1 S	3.4 H	3.1	2.9	2.8 HK	2.7 K	2.8 K	3.0 K	3.1 K	3.2 K	3.3 K	(3.5) SPK	3.0 K	2.9 K	(2.8) PSK	2.8 K	2.9 K
4	(3.1) FS	3.3	3.0 F	(3.1) FS	3.1 FS	(3.1) FS	3.3 F	3.2	3.4	3.6	3.3	3.4	3.2	3.1	3.1	3.4	3.4	3.4	3.5	(3.5) PS	(3.3) S	(3.2) FS	3.1 FS	3.1
5	2.9	3.0	3.0	3.1	3.1 F	3.2 S	3.3	3.5	3.6	3.3	3.4	3.5	3.4	3.2 H	3.2	3.3	3.3	3.3	3.4	3.5	3.3	(3.1) S	(3.1) PS	3.1
6	3.0	(2.9) S	3.1	3.0	(3.1) PS	(3.5) PS	(3.3) PS	3.5	3.5	3.1	3.3	3.0	2.8	3.1	3.1	3.1	3.3	(3.4) S	3.4	3.2	3.1	3.1	(2.9) S	3.1
7	3.0	3.1	(3.0) PS	(3.0) PS	3.2	3.2	3.3 F	3.4	3.4	3.5	3.4	3.0 H	3.1	3.2	3.2	3.2	3.4	3.4	3.3	3.3	3.2	3.1	3.1	3.0
8	2.9	3.0	3.0	3.0	3.1	(3.3) S	3.3	3.4	3.2 VH	3.5 H	3.4	3.2	3.3	3.3	3.2	3.5	3.3	3.5	3.3	3.2	3.1	3.3	3.4	3.0
9	3.0	2.9	3.0	3.1	3.0	(3.1) S	3.3	3.5	(3.6) S	3.5	3.4	3.4 H	3.5	3.4	3.4	3.3	3.3	3.5	3.4	3.3	3.2	3.1	3.1	3.0
10	3.1	3.1	3.1	3.2	(3.3) S	(3.3) PS	3.3	3.7	(3.5) S	3.4 H	3.4	3.0 H	3.5	3.1	3.2	3.3	3.4	3.5	(3.4) PS	3.4	3.2	3.1	3.0	3.0
11	3.0	(3.1) S	3.0	(3.0) PS	3.3	(3.1) SP	3.4	3.4 H	3.3	3.3 H	3.4	3.3	3.3	3.3	3.5	3.4	3.4	(3.5) S	3.5	3.2	3.3	3.1	3.0	3.0
12	3.0	3.1	(3.3) S	3.2	(3.1) S	(3.2) S	3.3	3.6	3.5	3.6	3.5	3.5	3.4	3.3	3.3	3.4	3.5	3.5	3.5	(3.5) PS	(3.3) PS	(3.1) FS	(3.0) PF	F S
13	FS	F S	F S	F S	(3.1) PF	J F	(3.3) FS	3.6	3.5	3.6	3.6	3.3	3.1 H	3.4	3.2 H	3.4	3.5	3.5	3.5	3.3	3.5 S	3.3	3.2	J S
14	3.1 FS	3.1 F	(3.1) FS	3.1 FS	J S	3.3 FS	(3.5) FS	3.6	3.6	3.5	3.4	A	3.2	3.2	3.3	3.4	3.4	3.5	3.5	3.3	3.4	3.2 FS	3.2 FS	3.2 S
15	3.1 FS	3.0 FS	(3.0) FS	3.1	3.2 H	3.3	3.5	(3.3) S	3.4	3.5	3.6	3.4	3.4	3.3	3.2	C	3.4	3.5	3.6	3.2	3.3	3.2	3.2	3.1
16	3.2	3.2	3.2	3.2	3.2	3.2	(3.1) SH	3.5	3.4	3.5	3.4	3.3	3.1	3.1	3.2	3.4	3.5	3.4	3.4	3.4	3.0	3.0	3.1	3.1
17	3.0	3.1	3.1	3.3	3.4	3.5	(3.3) PS	3.5	3.5	3.1 H	3.2	3.4	3.3	3.2 H	3.3	3.5	3.4	3.4	3.3	3.0	3.0	(3.0) S	3.0	2.8
18	2.9	2.9	3.1	3.1	3.1	(3.1) S	3.1	3.5	3.1	M	3.0	3.0	2.9	3.1	3.3	3.3	3.4	3.4	3.3 F	(3.3) PS	3.3 F	3.1 F	(3.1) FS	(3.3) F
19	(3.0) F	(3.1) F	(3.2) FS	(3.1) FS	(3.1) FS	S	(3.2) FS	3.5	3.2 F	3.4 F	3.4 F	3.3 F	3.2 F	3.2	3.2	3.3	3.3	3.3 F	(3.3) PS	3.2	3.3	J F	J F	3.0
20	(3.0) PF	3.1 F	3.1 F	(3.2) PS	2.9 JS	(3.0) JS	3.2	3.1	3.3	(3.4) F	3.1 F	3.0 F	3.3 FK	3.1 FK	3.3 K	3.3 FK	3.4 K	3.3 FK	(3.2) PSK	(3.4) FK	A K	J SK	A SK	A SK
21	J S	(2.8) PF	F S	(3.1) PF	3.1 S	3.1 S	(3.3) PS	3.4 F	3.5 FS	3.4	3.4	3.2	3.3	3.3	3.3	3.5	3.4	3.5	3.3	3.3	(3.4) JF	(3.1) PS	J S	(3.3) S
22	J S	J S	J S	J S	J S	(3.2) F	3.3 F	3.4 F	3.4	3.3	3.5	3.3	3.3	3.2	3.0	3.1	3.3	3.5	3.4	(3.3) PS	(3.1) PS	(3.0) FS	(3.1) JF	3.0
23	3.2 F	3.0	3.4 S	3.3	(3.0) S	J S	(3.0) PA	3.4	3.2	G	3.0 H	2.8 K	3.1 K	3.0 K	2.8 K	3.0 K	3.1 K	3.3 K	3.1 K	3.2 K	(3.1) SK	(3.0) CK	(2.8) JSK	3.0 K
24	3.1 K	J FK	(2.9) PFK	(3.0) PFK	3.0 K	(3.2) PFK	P SK	3.3 K	G K	G K	J SK	G K	2.8 HK	2.7 K	J SK	K (3.0) PS	3.0 HK	3.2 K	3.0 K	3.0 K	(3.0) SK	E K	E K	E K
25	E K	E K	E K	E K	E K	E K	F SK	3.3 K	3.2 K	3.4 K	3.2 FK	3.4 K	3.4	3.5	3.5	3.5	3.4	3.5	3.3	3.3 FS	3.4 F	(3.4) F	3.1 F	(3.1) S
26	F S	A S	2.8 FS	A S	A S	F S	(3.2) FS	3.5	3.7	3.4	3.5	3.4	3.4	3.2	3.3	3.5	(3.6) PS	3.6	3.5	3.5 F	3.5 F	3.4 F	3.0 F	3.1 F
27	3.2 F	3.1 F	3.2 F	3.1 FS	3.0	S	J S	3.6	3.5	3.6	3.5	3.1	3.3	3.2	3.4	3.4	3.5	3.4	3.5	3.5 F	3.1 F	(3.0) FS	(3.1) FS	(3.1) FS
28	(3.0) FS	3.2 F	(3.2) FS	(3.3) FS	(3.2) FS	(3.3) FS	(3.2) SF	3.6	3.6 F	3.5	3.5	3.4	3.4	3.3	3.4	3.5	C	3.5	C	C	C	C	C	C
29	(3.1) PS	A S	A S	3.2	(3.1) S	(3.2) PS	C	C	3.6	3.5	3.6	3.5	3.5	3.4	3.6	3.4	3.5	3.6	3.4 FS	(3.3) FS	(3.1) FS	2.9 FS	2.9 FS	3.0 FS
30	3.1 FS	3.1 FS	3.2 FS	3.4 FS	3.3 S	3.1 S	(3.2) S	3.5	3.6	3.6	3.3	3.4	3.4	3.4	3.3	3.4	3.5	3.5	3.5	3.4 FS	3.2 S	3.3	(3.0) AS	(3.1) AS
31	(3.0) PS	3.1	(3.0) PS	(3.0) PS	(3.2) PS	(3.3) PS	3.4 S	3.6	3.6	3.6	3.5	3.2	3.1	3.1	3.3	3.3	3.5	3.4	3.0	3.1 F	3.1 F	3.1 F	3.0	3.0
Median	3.0	3.1	3.1	3.1	3.1	(3.2)	3.3	3.5	3.4	3.4	3.4	3.3	3.3	3.2	3.25	3.35	3.4	3.5	3.4	3.3	3.2	3.1	3.1	3.05
Count	26	25	26	26	24	23	27	30	31	30	30	30	30	31	30	30	30	31	30	30	29	27	25	26

04.60

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

GPO 83-46049

NBS-D-3
Form adopted June 1946

TABLE 83

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

(M3000)F1 (Characteristic), ____ (Unit), October (Month), 1954

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.W., J.W.P., J.J.S.

Calculated by: E.J.W., J.W.P., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								Q	3.6	3.7HK	4.0HK	4.1K	3.8K	3.7HK	3.6K	3.5K	3.6K	LK						
2								L	L	3.7H	3.7	3.8	3.7H	3.8H	3.6H	3.6	L	L						
3								L	3.5H	3.8H	3.8	(4.0)SK	3.9HK	3.6K	3.6HK	3.7K	3.5HK	LK						
4								L	3.8	(3.9)L	(3.8)H	3.9	3.8H	3.7H	(3.6)H	(3.6)L	L	L						
5								L	L	(3.9)L	3.9	4.0	3.7	3.9	(3.9)L	(3.8)L	L	L						
6								L	(3.8)L	3.6H	3.8H	3.9H	3.6H	3.5	3.5H	3.6H	3.7	L						
7								L	3.7H	3.7H	3.7H	3.8	3.9H	3.8H	3.6	3.6	L	L						
8								L	(3.8)L	(3.9)L	(3.8)H	(3.7)H	3.6H	3.8H	(3.8)L	3.7	L	L						
9								Q	L	L	4.1H	3.9	3.7H	(3.8)H	4.0H	L	L	Q						
10								L	L	3.8H	3.8H	3.8H	4.0H	3.7H	3.7	L	L	L						
11								Q	3.6H	3.7H	3.7	3.8H	3.8H	3.7H	L	3.6	L	Q						
12								Q	L	L	(3.9)L	3.9	(3.9)H	(3.9)L	(3.9)H	(3.9)H	L	L						
13								Q	L	3.8	3.9H	4.2H	3.7	3.7	3.8	L	L	L						
14								L	L	3.9	4.0	A	3.8	3.7	3.7	L	L	Q						
15								L	L	3.9	3.9H	3.9H	L	L	L	C	L	Q						
16								L	L	3.8	4.0	3.9	(4.0)L	3.6	3.6	(3.8)L	L	L						
17								L	L	3.9H	3.6	3.9	L	3.8H	L	L	L	Q						
18								Q	L	M	3.7	3.8	3.7	3.5H	3.7H	3.7H	L	Q						
19								Q	L	(4.0)L	3.9F	3.9H	3.7H	(3.6)L	3.8	(3.8)L	L	Q						
20								Q	3.7	4.0F	3.8F	3.9F	3.7FK	3.6FK	(3.6)HK	3.6K	LK	LK						
21								Q	L	(3.8)L	3.8	3.9	3.8	3.6	3.7	(3.8)L	L	Q						
22								Q	L	(3.8)L	3.9H	3.9H	3.9H	(3.7)H	(3.7)H	(3.7)L	L	Q						
23								Q	(3.5)H	4.0	3.7H	3.7K	3.5HK	3.6K	3.5K	3.5K	LK	LK						
24								QK	3.6FK	3.7HK	3.7K	3.8K	3.5HK	3.5HK	3.6K	3.5HK	3.3K	QK						
25								QK	LK	3.7HK	3.8K	3.8HK	3.8F	L	L	L	L	Q						
26								Q	L	A	3.9	3.7H	3.7	3.6	3.7	L	L	Q						
27								Q	L	3.8	3.9	3.9	3.6	(3.6)H	3.7	L	L	Q						
28								Q	L	3.8	3.9	4.1	4.2H	3.8H	3.7H	3.9	L	Q						
29								Q	L	3.8	4.1	3.9	3.8	(3.8)L	L	L	L	Q						
30								Q	L	3.9	3.8	L	3.7H	3.7H	(3.8)L	L	L	Q						
31								Q	L	L	3.8H	3.9	3.7H	3.7H	3.7	L	L	Q						
Median								—	3.6	3.8	3.8	3.9	3.7	3.7	3.7	3.7	—	—						
Count									10	26	31	29	29	29	26	19	4							

04.60

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

GPO 83-46048

TABLE 84

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

NBS-D-3
Form adopted June 1946

(M1500) E , ______ (Unit) October (Month) , 1954
(Characteristic)

IONOSPHERIC DATA

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

Scaled by: E.J.W., J.W.P., J.J.S.

Calculated by: E.J.W., J.W.P., J.J.S.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1								4.4	4.2H	4.4K	4.4K	AK	AK	4.3HK	4.4K	4.4K	4.5K	SK								
2								4.4H	(4.4)P	(4.4)P	4.5	A	A	A	4.4	(4.4)S	(4.3)S	4.4								
3								(4.3)P	4.4H	4.5	4.4	4.4HK	4.2HK	4.3K	4.4K	4.3HK	4.3K	4.4K								
4								4.4H	4.4H	(4.4)S	(4.6)A	4.2	4.3	A	4.4H	(4.5)S	4.2H	4.1H								
5								4.4	4.4H	4.4H	A	A	(4.3)H	4.3H	4.2	4.2	4.2	4.3								
6								4.2H	(4.2)S	4.4	4.4	(4.4)P	4.4H	(4.3)P	4.3	4.4	(4.4)S	4.5								
7								4.5	4.3H	4.4	(4.4)P	4.5	(4.4)P	4.4H	4.2H	4.2	4.3	(4.4)S								
8								A	4.4	4.3	4.4	(4.4)H	4.3	4.3	4.4H	4.3	(4.3)P	(4.5)A								
9								(4.2)H	4.2	A	4.5	4.4	4.2H	4.3	4.3	4.2	4.2H	A								
10								S	A	4.5	4.4	4.5	4.5H	4.4	4.5	4.4	4.4	S								
11								(4.4)H	A	A	4.6	(4.5)P	(4.5)P	4.4H	4.4	4.5H	4.5	S								
12								(4.5)H	(4.4)S	(4.5)S	4.5	4.5H	4.3	4.5	4.4H	4.2	4.2	S								
13								(4.2)A	(4.2)S	4.3	4.5	(4.5)P	A	(4.4)A	4.4	4.4H	4.4	S								
14								S	(4.5)P	A	A	A	A	4.4	4.3	4.4H	4.3	(4.4)S								
15								(4.3)S	(4.5)S	4.4	4.5	4.5	A	4.4	4.5	C	4.4	(4.5)S								
16								S	4.4	A	A	4.5	(4.3)A	(4.3)A	(4.3)A	4.3	A	S								
17								S	(4.3)A	4.4	4.5	4.5	4.4	4.5	4.4	4.3	4.4	S								
18								S	4.4	M	4.3	4.5	4.5	4.5	4.4	(4.4)P	A	S								
19								4.3	4.4H	4.4H	(4.5)H	(4.2)A	A	(4.2)P	4.3F	4.3	4.2	S								
20								S	(4.2)H	4.4	(4.6)A	(4.5)A	4.5K	AK	AK	AK	4.3K	SK								
21								S	A	(4.4)A	(4.4)A	4.3	4.2	4.2	A	A	4.5	S								
22								4.3	(4.3)P	4.4	4.4	(4.5)A	4.2H	A	4.3	4.3	4.3	S								
23								A	A	A	A	(4.4)AK	4.2K	AK	4.4K	4.2K	4.2K	SK								
24								(4.4)SK	4.5K	4.5K	4.4HK	(4.5)SK	4.3HK	4.3HK	(4.5)PK	4.3K	4.4HK	SK								
25								(4.3)SK	4.4HK	4.5K	4.5K	AK	4.5	4.3	4.3	4.3	4.3H	S								
26								S	A	(4.5)P	(4.4)P	A	A	A	4.4	4.4	4.5	S								
27								S	4.5	(4.4)P	(4.4)P	4.4H	4.4H	4.4	4.3	A	(4.5)P	S								
28								S	(4.5)P	A	A	A	4.2H	4.2H	4.2H	4.3	C	S								
29								S	4.3	A	A	4.2	4.2	4.3	4.4	(4.3)P	A	S								
30								S	4.5	A	A	A	4.3	4.3	(4.3)P	4.3	A	S								
31								S	S	4.5H	4.4	4.3	4.4	4.3	(4.4)P	4.4H	(4.4)P	S								
Median								4.4	4.4	4.4	4.4	4.5	4.3	4.3	4.4	4.3	4.3	4.4								
Count								16	25	22	24	23	24	25	29	27	26	9								

04,60

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

GPO 83-46049

Table 85

Ionospheric Storminess at Washington, D. C.

October 1954

Day	Ionospheric character* 00-12 GCT	Ionospheric character* 12-24 GCT	Principal storms Beginning GCT	Principal storms End GCT	Geomagnetic character** 00-12 GCT	Geomagnetic character** 12-24 GCT
1	2	5	0900	----	5	3
2	3	2		0000	2	1
3	3	4	1100	2300	5	3
4	1	1			4	2
5	3	1			2	2
6	2	3			3	3
7	2	1			2	2
8	2	1			3	3
9	1	2			2	1
10	1	1			2	1
11	2	2			2	1
12	1	1			0	0
13	1	3			1	1
14	0	3			1	2
15	0	3			3	1
16	1	1			1	2
17	1	1			2	2
18	2	3			5	3
19	3	3			3	3
20	1	4	1200	2300	3	2
21	3	3			2	1
22	1	2			2	3
23	1	5	1100	----	3	3
24	4	6	----	----	5	4
25	7	1	----	1100	4	2
26	3	1			3	2
27	3	1			3	2
28	3	3			2	1
29	2	1			1	1
30	1	1			3	2
31	1	3			2	3

*Ionosphere character figure (I-figure) for ionospheric storminess at Washington, D. C., during 12-hour period, on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

**Average for 12 hours of Cheltenham, Maryland, geomagnetic K-figures on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

----Dashes indicate continuing storm.

Table 86

Radio Propagation Quality Figures

(Including Comparisons with Short-Term and Advance Forecasts)

September 1954

Day	North Pacific 9-hourly quality figures			Short-term forecasts issued at			whole day quality index	Advance forecasts (Jp reports) for whole day; issued in advance by:		
	03 to 12	09 to 18	18 to 03	02	09	18		1-4 days	4-7 days	8-25 days
1	6	5	6	6	6	6	6	6	6	
2	6	6	6	5	5	6	6	5	5	
3	5	5	5	5	5	6	5	5	5	
4	6	5	5	5	5	6	5	5	6	
5	5	5	5	6	5	6	5	5	6	
6	5	5	5	5	5	6	5	6	6	
7	5	5	6	5	5	6	5	6	6	
8	6	5	6	5	6	6	5	5	6	
9	5	5	6	6	5	6	5	6	6	
10	5	5	6	6	5	6	6	6	6	
11	6	5	6	6	5	6	5	6	6	
12	6	5	6	5	5	6	6	5	5	
13	6	6	6	6	5	7	6	5	5	
14	5	5	5	6	5	6	5	6	6	
15	5	5	5	5	5	6	5	6	6	
16	6	6	6	5	5	6	6	6	6	
17	5	5	6	6	5	7	6	6	6	
18	6	6	6	5	5	6	6	6	6	
19	6	6	5	6	6	7	6	6	6	
20	5	(4)	(4)	6	5	(4)	(4)	5	5	
21	(4)	(4)	5	(4)	(3)	5	(4)	5	5	
22	5	(4)	5	5	(4)	6	(4)	5	6	
23	6	5	5	5	5	6	5	6	6	
24	5	5	5	5	5	6	5	6	6	
25	6	5	5	5	5	6	5	6	5	
26	6	5	6	5	5	6	5	6	5	
27	6	5	6	6	5	6	6	6	6	
28	5	5	6	5	5	6	5	5	6	
29	5	5	5	5	5	5	5	(4)	(4)	X
30	5	5	6	5	(4)	6	5	(4)	(4)	X

Score:

		02	09	18	1-4 days	4-7 days
Quiet Periods	P	14	20	16	12	10
	S	15	7	12	15	17
	S	0	0	1	0	0
	F	0	0	0	0	0
Disturbed Periods	P	1	1	1	0	0
	S	0	2	0	3	2
	U	0	0	0	0	0
	F	0	0	0	0	1

Scales:

Q-scale of Radio Propagation Quality
- (1) - useless
- (2) - very poor
- (3) - poor
- (4) - poor to fair
- 5 - fair
- 6 - fair to good
- 7 - good
- 8 - very good
- 9 - excellent

Scoring: (beginning October 1952)
- P - Perfect: forecast quality equal to observed
- S - Satisfactory: (beginning October 1952) forecast quality one grade different from observed
- U - Unsatisfactory: forecast quality two or more grades different from observed when both forecast and observed were ≥ 5, or both ≤ 5
- F - Failure: other times when forecast quality two or more grades different from observed

Symbols:
- X - probable disturbed date

Note: All times are UT (Universal Time or GCT)

Table 87a

Radio Propagation Quality Figures

(Including Comparisons with Short-Term and Advance Forecasts)

September 1954

Day	North Atlantic 6-hourly quality figures				Short-term forecasts issued about one hour in advance of:				Whole day quality index	Advance forecasts (J-reports) for whole day; issued in advance by:			Geomagnetic K_{CH}	
	00 to 06	06 to 12	12 to 18	18 to 24	00	06	12	18		1-4 days	4-7 days	8-25 days	Half day (1)	(2)
1	6	6	7	6	6	5	7	7	6	6	7		3	(4)
2	5	(4)	7	6	5	(3)	6	6	6	6	6		(5)	2
3	(4)	(4)	6	6	5	(4)	6	6	5	5	6		3	(4)
4	5	(3)	7	6	5	(3)	6	6	5	6	6		(4)	3
5	5	(4)	6	7	5	(4)	6	7	5	6	6		(4)	2
6	6	5	7	6	6	5	7	7	6	6	6		3	3
7	(4)	(4)	6	6	5	(3)	5	6	5	6	6		3	3
8	(4)	5	6	6	5	(3)	6	6	5	6	6		2	2
9	5	(4)	7	6	5	(4)	6	6	6	6	6		3	2
10	5	(4)	7	7	6	(4)	7	7	6	5	7		3	2
11	6	5	7	7	6	(4)	7	7	6	6	7		3	2
12	5	5	7	7	6	(4)	7	6	6	6	6		2	1
13	6	(4)	7	7	6	5	7	7	6	6	6		2	2
14	5	(4)	6	5	5	(4)	6	6	5	6	6		(4)	3
15	(4)	(3)	7	7	(4)	(3)	6	6	5	6	6		3	3
16	6	(4)	6	6	5	(4)	7	7	5	6	6		(4)	2
17	6	5	7	7	6	5	7	7	6	6	6		3	2
18	5	5	6	7	6	6	7	7	6	6	6		3	2
19	(4)	5	7	7	6	(4)	7	6	6	6	6		2	2
20	5	5	6	5	5	(4)	6	5	5	(4)	(4)	X	(4)	(5)
21	(2)	(3)	6	5	(4)	(3)	(4)	5	(3)	(4)	(4)	X	(4)	3
22	5	5	6	7	(4)	(4)	6	6	6	(4)	5		2	2
23	6	5	7	6	5	5	6	7	6	5	5		3	1
24	6	5	7	7	6	5	6	7	6	6	5		2	2
25	6	(4)	7	6	5	(4)	6	5	6	(4)	(4)	X	3	3
26	5	(4)	7	7	5	(4)	6	6	6	(4)	(4)	X	3	2
27	5	5	7	7	6	(4)	7	7	6	5	5		2	3
28	5	5	6	6	6	(4)	6	6	5	6	5		(4)	2
29	5	5	6	6	5	(4)	6	6	6	(4)	(4)	X	(4)	3
30	5	(4)	7	6	(4)	(3)	6	6	6	(4)	(4)	X	3	2

Score:

		00	06	12	18	1-4 days	4-7 days
Quiet Periods	P	14	4	17	19	12	9
	S	10	10	12	11	12	16
	U	0	1	0	0	0	0
	F	0	0	1	0	5	4
Disturbed Periods	P	1	11	0	0	0	0
	S	3	4	0	0	1	1
	U	1	0	0	0	0	0
	F	1	0	0	0	0	0

Scales:

Q-scale of Radio Propagation Quality
- (1) - useless
- (2) - very poor
- (3) - poor
- (4) - poor to fair
- 5 - fair
- 6 - fair to good
- 7 - good
- 8 - very good
- 9 - excellent

K-scale of Geomagnetic Activity
0 to 9, 9 representing the greatest disturbance; $K_{Ch} \geqslant 4$ indicates significant disturbance, enclosed in ( ) for emphasis

Scoring: (beginning October 1952)
- P - Perfect: forecast quality equal to observed
- S - Satisfactory: (beginning October 1952) forecast quality one grade different from observed
- U - Unsatisfactory: forecast quality two or more grades different from observed when both forecast and observed were $\geqslant 5$, or both $\leqslant 5$
- F - Failure: other times when forecast quality two or more grades different from observed

Symbols:
X - probable disturbed date

Note: All times are UT (Universal Time or GCT)

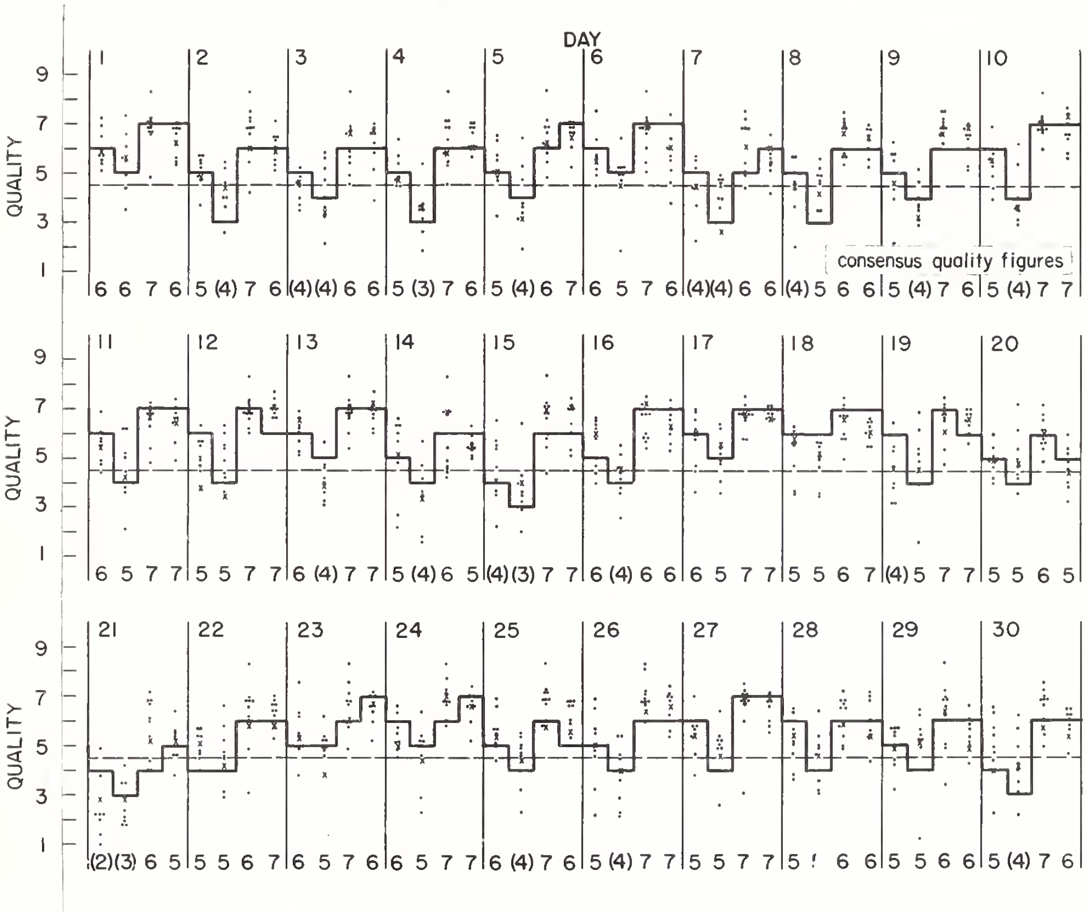
Table 87b

Short-Term Forecasts--- September 1954

—forecast

× CRPL observation (not in consensus)

• individual reports of quality (adjusted to CRPL scale)



Outcome of Advance Forecasts (1 to 4 days ahead) --- September 1954

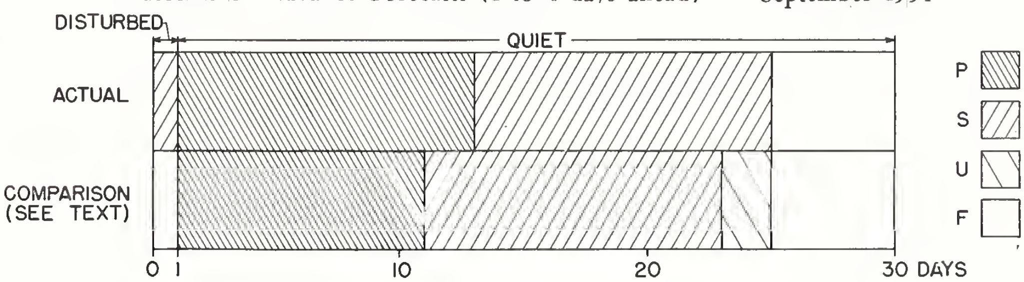


Table 88a

Coronal observations at Climax, Colorado, (5303A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
UT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Oct 1.6	-	-	-	-	-	5	5	5	4	4	6	20	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.6a	X	X	X	-	-	3	4	4	3	3	8	10	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	-	-	-	-	-	-	-	-
3.x																																					
4.6	-	-	-	-	-	3	4	3	4	4	4	4	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.6	-	-	-	-	-	2	2	2	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.7	-	-	-	-	-	-	2	2	2	1	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-
7.7a	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.8a	-	-	-	1	1	1	1	-	-	-	-	-	-	-	-	1	12	1	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X
10.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	5	12	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	5	6	1	-	-	-	-	-	1	1	1	1	-	-	-	-	-	-	-	-	-
12.9	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
13.x																																					
14.6	-	-	-	-	-	-	-	-	1	1	1	1	1	1	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
15.7	-	-	-	-	-	-	-	-	2	3	3	2	2	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.6	-	-	-	1	1	-	-	-	1	1	3	2	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	1	1	1	11	6	3	1	1	1	-	-	-	-	-	-	-	-	1	1	1	2	1	-	-	-	-	-	-	-
18.x																																					
19.7a	-	-	-	-	-	-	-	-	1	1	2	3	2	1	1	1	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-
20.8a	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
21.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.7	-	-	-	-	-	-	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	1	2	3	2	2	2	-	-	-	-	-	-	-	-	-	-
23.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-
24.x																																					
25.x																																					
26.x																																					
27.7	-	-	-	-	-	-	1	2	3	4	4	3	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.7a	-	-	-	1	1	1	2	2	7	10	14	12	3	1	1	1	1	1	-	-	-	-	-	1	2	2	2	1	-	-	-	-	-	-	-	-	-
29.7	-	-	-	1	1	1	2	2	3	12	19	13	11	3	2	1	5	2	1	-	-	-	-	1	2	2	1	-	-	-	-	-	-	-	-	-	-
30.7	-	-	-	-	-	-	-	1	2	3	12	8	7	3	-	-	3	4	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	1	2	2	2	1	9	16	14	9	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 89a

Coronal observations at Climax, Colorado, (6374A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
UT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Oct 1.6	2	2	2	2	1	1	1	1	1	3	7	18	24	5	4	4	5	6	6	6	5	5	4	3	3	2	2	2	2	2	1	1	1	2	2	3	2
2.6a	X	X	X	-	-	-	-	-	-	-	-	14	10	3	2	3	3	3	2	2	2	2	2	2	1	1	1	X	X	1	1	1	1	1	1	1	1
3.x																																					
4.6	1	1	1	1	1	1	1	1	1	1	1	12	9	7	8	6	7	6	7	6	6	5	6	6	6	3	3	4	2	2	2	2	1	1	1	1	1
5.6	1	1	1	1	1	2	2	1	1	1	2	3	3	4	3	2	5	6	5	4	3	3	5	5	4	4	4	2	1	1	1	1	1	1	1	1	1
6.7	1	1	1	1	1	1	1	1	1	1	1	3	3	4	3	2	3	3	3	3	3	3	3	4	5	4	2	2	1	1	1	1	1	2	2	2	3
7.7a	1	1	1	1	1	1	1	1	1	1	1	2	2	3	4	3	3	3	3	4	4	3	3	1	2	4	2	2	2	1	1	1	1	1	2	2	2
9.0	2	1	1	1	1	1	1	1	2	2	2	3	3	5	7	8	5	5	6	4	3	3	3	2	1	1	1	1	1	1	1	1	1	2	2	2	2
9.8a	3	3	2	1	1	1	1	2	2	2	2	3	4	5	5	16	20	10	5	3	3	3	3	3	3	X	X	X	X	X	X	X	X	X	X	X	X
10.7	1	2	2	3	2	1	1	1	1	1	3	3	2	2	2	4	12	14	6	3	3	3	4	4	3	1	1	1	1	1	1	1	1	1	1	2	2
11.6	1	1	1	1	2	1	1	1	1	2	4	5	3	2	4	11	12	6	5	4	5	5	5	5	4	3	2	2	2	1	1	1	1	2	2	2	1
12.9	1	2	1	1	1	1	1	1	1	1	1	1	1	2	3	10	9	8	4	9	5	3	3	2	2	2	1	1	1	1	1	1	1	2	1	1	1
13.x																																					
14.6	1	1	1	1	1	1	1	1	1	1	1	3	3	3	3	4	4	5	8	9	9	9	5	5	6	5	4	4	1	1	1	1	1	2	2	2	1
15.7	2	2	2	2	1	1	1	1	2	3	4	4	4	3	3	4	11	12	12	11	10	10	9	7	5	5	3	2	1	1	1	1	2	2	2	2	3
16.6	1	2	1	1	1	1	1	2	2	3	5	6	6	3	3	3	5	6	6	6	6	6	7	7	4	4	3	2	2	1	1	1	2	2	2	2	2
17.7	1	1	2	1	1	1	1	1	1	2	4	11	20	9	7	6	7	8	9	9	8	8	7	6	6	6	5	3	2	2	1	1	2	2	3	2	2
18.x																																					
19.7a	1	1	1	1	1	1	1	1	1	2	2	4	5	6	5	5	5	5	5	5	5	5	5	5	3	2	1	1	1	1	1	2	2	2	2	2	1
20.8a	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	3	3	3	4	3	3	3	2	2	2	1	1	1	1	1	1	1	1	1	1	X
21.7a	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	3	3	4	4	3	3	3	3	2	2	1	1	1	1	1	1	1	2	2	1
22.7	2	2	1	1	1	1	1	1	4	3	3	3	3	3	5	5	6	6	6	6	5	5	5	5	5	4	4	4	2	1	1	2	2	2	2	2	2
23.8	2	1	1	1	1	1	1	1	1	1	1	1	2	3	3	4	5	5	5	4	5	4	3	2	2	2	2	1	1	1	1	1	1	1	1	1	2
24.x																																					
25.x																																					
26.x																																					
27.7	1	1	1	1	1	1	1	1	1	3	5	4	4	4	4	5	6	8	6	4	5	5	4	3	3	3	2	3	1	1	1	1	1	2	2	1	1
28.7a	2	1	3	2	1	2	1	1	1	6	16	14	6	6	6	5	5	9	10	8	8	8	8	5	5	5	4	4	4	2	3	2	2	2	2	1	1
29.7	1	2	2	2	1	1	1	1	1	3	9	8	7	5	6	5	6	7	6	7	7	6	6	5	3	3	4	3	3	2	1	1	2	2	2	2	2
30.7	1	2	2	1	1	1	1	2	1	1	3	11	8	3	3	5	6	6	10	8	7	6	6	3	2	1	1	1	1	1	1	1	2	2	2	2	1
31.7	1	2	1	1	1	1	1	1	4	1	1	13	8	9	5	6	6	8	9	7	7	6	6	6	6	4	2	2	1	1	1	1	1	1	2	2	3

Table 88b

Coronal observations at Climax, Colorado, (5303A), west limb

Date	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
UT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Oct 1.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X
3.x																																					
4.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	5	1	-	-	-	-	-	-	-	-	-	-
5.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.7	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.0	-	-	-	-	-	-	-	-	1	3	3	3	2	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
9.8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-
10.7	-	-	-	-	-	-	-	-	1	1	2	5	9	4	1	-	-	-	-	-	-	-	-	1	1	1	1	-	-	-	-	-	-	-	-	-	-
11.6	-	-	-	-	-	-	-	-	-	-	2	12	10	5	1	-	-	-	-	-	-	-	1	1	2	2	1	-	-	-	-	-	-	-	-	-	-
12.9	-	-	-	-	-	-	-	-	-	-	4	5	3	1	1	-	-	-	-	-	-	-	-	2	2	3	-	-	-	-	-	-	-	-	-	-	-
13.x																																					
14.6	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1	-	-	-	-	-	-	-	-	1	1	6	7	3	2	2	1	-	-	-	-	-	-
15.7	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	-	-	-	-	-	-	-	1	2	2	21	19	6	3	3	4	1	-	-	-	-	-
16.6	-	-	-	-	-	-	-	-	-	1	-	-	1	1	1	-	-	-	-	-	1	1	2	6	23	21	16	4	3	4	5	1	-	-	-	-	-
17.7	-	-	-	-	-	1	1	1	1	1	2	1	-	-	-	-	-	-	-	-	-	1	2	5	11	23	20	5	3	7	8	3	1	-	-	-	-
18.x																																					
19.7a	-	-	-	-	-	-	-	-	1	3	4	1	-	-	-	-	-	-	-	-	-	-	-	-	1	2	3	4	2	3	1	2	-	-	-	-	-
20.8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-
21.7	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	1	1	1	-	-	1	2	2	1	-	-	-	-	-	-	-
22.7	-	-	-	-	-	-	-	1	2	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2	2	1	1	3	3	2	-	-	-
23.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	6	8	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.x																																					
25.x																																					
26.x																																					
27.7	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-
28.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-
29.7	-	-	-	-	-	-	-	-	1	1	1	-	-	1	1	1	-	-	-	-	-	-	-	-	-	1	3	1	-	-	-	-	-	-	-	-	-
30.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	2	2	2	1	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	2	4	6	3	2	1	-	-	-	-	-	-	-	-

Table 89b

Coronal observations at Climax, Colorado, (6374A), west limb

Date	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
UT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Oct 1.6	2	1	1	1	1	1	1	2	2	2	2	2	3	3	3	3	4	5	5	4	4	4	4	3	2	1	1	1	1	1	1	1	1	2	2	2	2
2.6a	1	1	1	1	1	1	1	1	1	1	1	2	3	3	4	4	4	5	5	4	4	2	2	3	3	3	2	2	X	X	X	X	X	X	X	X	X
3.x																																					
4.6	1	1	1	1	1	1	1	1	1	1	1	1	1	3	6	5	5	6	6	6	6	5	3	4	5	1	1	1	1	1	1	1	1	1	1	1	1
5.6	1	2	2	2	2	2	2	2	2	3	3	3	3	3	4	4	6	6	5	5	5	4	4	4	3	3	2	1	1	1	1	1	2	2	1	1	1
6.7	3	2	2	1	1	1	1	1	1	2	2	2	2	3	4	3	5	5	5	3	4	3	1	1	2	3	2	2	1	1	1	1	1	1	1	1	1
7.7	2	2	1	1	1	1	2	2	2	2	1	1	2	6	5	4	3	4	4	4	4	4	3	3	3	3	2	2	1	1	1	1	1	1	1	1	1
9.0	2	1	1	1	1	1	1	2	2	3	5	4	4	5	5	4	3	4	5	4	3	3	2	2	2	2	2	2	1	1	1	1	1	1	1	1	2
9.8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	5	3	2	2	2	2	2	3	1	3
10.7	2	2	2	1	1	1	1	1	1	1	1	4	5	2	1	4	4	2	4	5	4	3	2	1	1	1	1	1	1	1	1	1	1	1	1	2	1
11.6	1	1	1	2	1	1	1	1	1	2	2	1	2	6	1	5	5	5	5	5	5	3	3	2	1	1	2	2	2	2	2	1	1	1	1	1	1
12.9	1	1	1	1	1	1	1	1	1	1	1	1	3	2	2	3	5	5	6	6	6	3	3	3	4	3	1	1	1	2	1	1	1	2	1	1	1
13.x																																					
14.6	1	1	1	1	1	1	2	2	2	2	2	2	3	3	3	3	3	5	6	5	5	5	5	4	6	16	6	1	1	1	1	1	1	1	1	2	1
15.7	3	2	1	1	1	1	2	2	2	2	2	3	4	4	5	5	6	6	6	7	7	6	5	6	26	17	4	3	2	1	1	1	1	1	2	2	2
16.6	2	2	2	1	1	1	2	2	2	1	3	4	4	5	6	9	7	8	8	13	8	6	6	5	17	31	10	1	1	1	1	2	2	2	2	1	1
17.7	2	2	1	1	2	1	2	2	2	3	4	5	5	6	6	7	9	10	10	10	11	9	9	12	15	30	18	3	1	2	2	2	2	2	2	2	1
18.x																																					
19.7a	1	1	1	1	1	1	1	1	1	1	6	6	6	3	3	3	3	3	3	3	3	3	4	4	4	2	2	1	1	2	2	2	2	2	2	2	1
20.8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2	2	2	2	2	2	2	1	1
21.7	1	1	1	1	1	1	1	1	1	1	1	4	5	2	2	2	3	1	2	3	2	2	1	1	1	1	1	1	1	1	1	1	1	2	2	2	1
22.7	2	2	1	1	1	1	1	1	2	2	2	2	3	3	2	3	4	2	2	5	6	6	5	4	3	1	1	1	1	1	1	1	1	1	1	1	2
23.8	2	1	1	1	1	1	1	2	1	1	1	1	1	1	3	4	2	2	1	1	8	15	7	2	2	1	1	1	1	1	1	1	1	2	1	1	2
24.x																																					
25.x																																					
26.x																																					
27.7	1	1	1	1	2	1	1	1	2	2	3	4	3	4	4	5	6	6	6	5	5	5	5	5	4	3	2	1	1	1	1	1	2	1	1	1	1
28.7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	3	4	4	5	5	5	4	3	2	2	2	1	1	1	1	1	1	2	3	3	2
29.7	2	2	2	2	2	1	2	1	1	2	4	3	3	4	6	7	8	7	7	9	5	6	5	4	2	3	3	2	1	1	1	2	2	2	3	2	1
30.7	1	1	1	1	1	1	1	1	2	2	3	2	3	2	5	6	5	5	5	5	3	3	4	3	2	2	1	1	1	1	1	1	1	1	2	2	1
31.7	3	2	1	2	3	1	1	1	1	2	4	3	3	3	4	10	8	6	7	8	8	5	5	8	2	2	4	3	1	1	1	1	1	2	1	2	1

Table 90a

Coronal observations at Climax, Colorado, (6702A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
UT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Oct 1.6	-	-	-	-	-	-	-	1	3	3	4	4	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.6a	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	-	-	-	-	-	-	-	-
3.x																																					
4.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X
10.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.x																																					
14.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.x																																					
19.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
21.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.x																																					
25.x																																					
26.x																																					
27.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.7a	-	-	-	-	-	-	-	1	2	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.7	-	-	-	-	-	-	1	1	2	3	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	1	2	1	1	1	2	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 91a

Coronal observations at Sacramento Peak, New Mexico, (5303A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
UT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Oct 1.7	-	-	-	-	2	10	16	17	16	14	15	19	47	32	5	4	2	2	-	-	-	2	3	2	4	5	4	2	3	4	3	2	-	-	-	-	-
2.x																																					
3.7	-	-	-	-	-	2	12	17	14	13	11	13	39	38	18	8	5	3	2	2	-	-	-	2	3	5	7	6	3	3	2	2	-	-	-	-	-
4.x																																					
5.x																																					
6.x																																					
7.x																																					
8.x																																					
9.7	-	-	-	-	-	-	2	2	2	2	3	3	2	2	3	5	11	23	7	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.7	-	-	-	-	-	-	-	2	2	3	2	2	3	2	3	5	16	28	16	5	3	-	-	-	2	3	4	4	3	2	-	-	-	-	-	-	-
11.7	-	-	-	-	-	-	-	-	2	3	3	3	4	3	2	3	8	10	19	3	2	-	-	-	-	2	3	2	2	3	2	2	-	-	-	-	-
12.7	-	-	-	-	-	-	-	-	2	2	3	2	3	3	3	4	3	3	5	4	3	3	2	3	2	2	-	2	3	2	-	-	-	-	-	-	-
13.8a	-	-	-	-	-	-	-	-	2	3	3	2	2	3	-	-	-	-	-	2	2	2	2	2	2	3	2	3	3	3	4	3	2	2	-	-	-
14.7a	-	-	-	-	-	-	-	-	2	3	4	4	3	3	3	2	2	-	-	2	3	3	4	2	2	2	-	-	3	3	2	2	-	-	-	-	-
15.6	-	-	-	-	-	-	-	-	2	3	3	3	3	2	2	-	-	-	-	-	-	-	-	-	2	2	2	3	2	-	-	-	-	-	-	-	-
16.6	-	-	-	-	-	2	3	3	2	4	4	5	7	5	3	3	2	-	-	-	-	-	-	-	-	2	2	3	2	-	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	-	2	3	5	14	12	4	3	2	-	-	-	2	3	2	2	-	2	3	3	3	2	-	-	-	-	-	-	-
18.7	-	-	-	-	-	-	-	-	2	3	3	4	14	15	4	3	2	2	-	-	-	-	2	2	2	3	3	2	2	2	-	-	-	-	-	-	-
19.7	-	-	-	-	-	-	-	2	2	3	2	5	11	5	4	3	2	-	-	-	-	2	2	2	2	3	2	-	-	-	-	-	-	-	-	-	-
20.6	-	-	-	-	-	-	-	-	-	2	3	4	4	4	3	2	2	2	-	-	-	2	2	-	-	-	2	3	3	2	2	-	-	-	-	-	-
21.7	-	-	-	-	-	-	-	-	2	3	3	2	2	3	3	4	3	2	-	-	-	-	2	3	2	3	3	3	2	3	2	-	-	-	-	-	-
22.7a	-	-	-	-	-	-	-	-	2	3	3	2	3	3	2	2	-	-	-	-	-	-	2	3	3	3	4	4	2	3	3	2	-	-	-	-	-
23.7a	-	-	-	-	-	-	2	3	4	4	3	3	2	3	3	2	-	-	-	-	-	2	3	4	5	4	4	3	3	2	-	-	-	-	-	-	-
24.7a	-	-	-	-	-	2	2	-	-	2	2	2	-	2	X	X	2	2	3	2	2	3	4	5	7	8	7	4	2	2	2	-	-	-	-	-	-
25.x																																					
26.7	2	2	3	3	2	3	3	4	5	5	5	5	6	5	4	3	2	-	-	-	-	-	2	3	5	8	7	4	3	2	-	-	-	-	-	-	-
27.x																																					
28.7	-	-	-	2	2	2	3	3	4	6	11	13	12	7	4	3	5	4	3	2	-	-	-	3	4	5	6	4	3	2	-	-	-	-	-	-	-
29.x																																					
30.7	-	-	-	-	2	3	4	5	4	7	13	23	22	19	17	10	8	9	11	3	2	-	-	-	3	4	5	3	2	-	-	-	-	-	-	-	-
31.7	-	-	-	-	2	2	3	4	4	5	8	12	11	7	4	3	2	-	-	-	-	-	-	2	2	2	3	2	-	-	-	-	-	-	-	-	-

Table 90b

Coronal observations at Climax, Colorado, (6702A), west limb

Date	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
UT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Oct 1.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X
3.x																																					
4.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-
10.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.x																																					
14.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	3	1	-	-	-	-	-	-	-	-	-
16.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4	3	1	-	-	-	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	5	5	1	-	-	-	-	-	-	-	-	-
18.x																																					
19.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-	-
21.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.x																																					
25.x																																					
26.x																																					
27.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 91b

Coronal observations at Sacramento Peak, New Mexico, (5303A), west limb

Date	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
UT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Oct 1.7	-	-	-	-	-	-	-	2	3	3	3	2	3	3	2	2	2	-	-	-	-	2	2	3	4	5	4	3	2	2	-	-	-	2	3	-	-
2.x																																					
3.7a	-	-	-	-	-	-	-	-	2	3	3	3	4	4	4	3	4	2	-	-	2	2	3	4	8	8	15	4	3	2	4	3	2	-	-	-	-
4.x																																					
5.x																																					
6.x																																					
7.x																																					
8.x																																					
9.7	-	-	-	-	-	-	-	2	3	4	6	7	14	16	11	4	3	2	-	2	3	2	4	5	7	6	4	3	3	2	2	-	-	-	-	-	-
10.7	-	-	-	-	-	-	-	2	3	3	4	10	16	20	14	3	2	-	-	-	2	3	3	4	6	9	6	4	3	2	2	2	-	-	-	-	-
11.7	-	-	-	-	-	-	-	-	2	2	3	8	13	16	14	7	4	3	2	-	-	2	3	3	5	6	5	4	3	2	2	-	-	-	-	-	-
12.7	-	-	-	-	-	-	-	-	-	2	3	11	16	14	11	8	4	2	-	2	3	3	2	3	11	23	7	5	4	3	3	3	2	2	-	-	-
13.8a	-	-	-	-	-	-	-	-	-	2	4	3	4	5	6	8	6	4	3	2	3	3	4	5	5	13	12	11	6	5	5	5	4	3	2	-	-
14.7a	-	-	-	-	-	-	-	-	2	3	3	2	2	3	4	4	3	2	-	-	2	3	2	3	5	8	18	16	12	10	8	9	7	4	3	-	-
15.6	-	-	-	-	-	-	-	-	-	2	3	2	3	3	2	3	2	-	-	-	-	2	3	5	8	23	22	13	5	4	4	5	4	3	2	-	-
16.6	-	-	-	-	-	-	-	-	-	2	2	3	2	-	2	2	2	-	-	2	3	2	3	5	14	23	39	23	12	8	9	12	13	4	3	2	-
17.7	-	-	-	-	-	-	-	2	2	3	4	2	2	3	2	2	3	2	-	-	-	2	3	4	8	14	39	38	18	8	13	14	13	5	-	-	-
18.7	-	-	-	-	-	-	-	2	3	5	6	8	4	3	2	-	-	-	-	-	2	3	2	3	4	5	8	28	26	8	13	14	13	3	2	-	-
19.7	-	-	-	-	-	-	-	2	3	3	5	11	13	3	3	2	2	-	-	-	-	-	2	2	3	4	5	12	14	12	11	14	17	5	3	-	-
20.6	-	-	-	-	-	-	-	-	2	3	3	8	12	3	2	2	2	-	-	-	-	2	2	2	3	2	5	7	7	8	7	8	11	12	2	-	-
21.7	-	-	-	-	-	-	-	2	3	4	3	5	7	3	2	2	2	-	-	-	2	3	3	3	3	4	5	6	5	5	4	5	8	12	3	-	-
22.7a	-	-	-	-	-	-	-	2	3	2	4	5	4	2	2	-	-	-	2	3	4	5	4	3	2	3	4	4	4	5	5	4	5	8	6	3	-
23.7a	-	-	-	-	-	-	-	-	2	3	5	4	4	3	3	2	2	-	-	2	11	17	8	5	3	2	3	3	2	4	4	3	3	3	5	4	-
24.7a	-	-	-	-	-	-	-	2	3	2	3	4	4	3	2	2	2	-	-	2	8	16	11	6	5	3	3	3	2	3	2	2	2	3	3	2	-
25.x																																					
26.7	-	-	-	-	-	-	-	-	-	2	3	3	3	4	3	2	2	-	-	-	2	3	3	3	5	8	4	3	2	2	2	-	-	-	-	-	2
27.x																																					
28.7-	-	-	-	-	-	-	2	2	3	3	4	3	3	2	3	2	3	2	-	-	-	2	2	2	3	3	5	4	3	3	2	-	-	-	-	-	-
29.x																																					
30.7	-	-	-	-	-	-	-	2	2	3	3	3	2	-	2	-	-	-	-	-	-	-	2	2	3	4	10	5	3	2	2	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	5	7	5	2	2	-	-	-	-	-	-	-

Coronal observations at Sacramento Peak, New Mexico, (6374A), east limb

Date UT	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Oct 1.7	3	4	4	4	3	3	5	6	5	3	8	14	39	40	14	11	12	14	15	14	11	11	10	7	6	7	5	7	6	5	4	3	2	2	3	4	4
2.x																																					
3.7	4	5	4	4	3	3	4	4	3	3	2	5	35	44	23	24	14	20	21	17	16	15	14	13	14	13	11	7	8	5	3	4	2	4	3	4	5
4.x																																					
5.x																																					
6.x																																					
7.x																																					
8.																																					
9.7	4	5	4	4	4	3	2	3	4	3	4	5	7	10	8	11	20	28	18	11	12	10	9	11	10	7	4	5	4	3	2	2	4	5	3	4	4
10.7	5	4	4	5	4	3	2	4	4	5	4	9	11	11	10	14	18	32	20	10	11	12	13	14	12	11	4	5	5	4	3	2	3	2	3	4	5
11.7	4	3	4	4	3	2	2	3	3	4	5	6	7	7	8	11	14	20	13	10	8	6	6	7	8	7	6	4	5	3	2	3	2	3	3	4	4
12.7	4	4	4	5	4	2	3	3	5	7	8	8	11	10	14	16	28	30	23	20	16	14	13	12	11	12	8	4	5	4	3	4	3	3	4	5	4
13.8a	4	5	4	4	4	3	2	3	4	5	8	7	6	8	11	13	14	15	14	14	15	14	13	11	11	12	11	11	8	4	2	3	3	2	-	4	3
14.7a	5	5	5	4	4	3	3	5	6	6	6	8	13	12	11	11	12	14	16	16	15	15	14	13	11	12	13	10	8	5	4	3	4	4	4	5	4
15.6	3	3	3	4	3	2	2	2	-	2	3	5	7	7	8	7	8	12	14	11	10	11	10	10	8	7	6	5	5	3	2	2	2	3	2	2	4
16.6	3	4	4	3	3	3	2	3	4	5	6	8	14	16	6	5	7	11	12	12	11	12	12	14	13	11	10	6	5	4	4	3	2	3	4	4	4
17.7	3	3	3	4	4	3	3	2	4	5	5	7	28	16	14	12	9	11	14	13	12	11	10	8	9	9	11	8	6	4	3	3	2	3	3	7	6
18.7	4	3	3	4	4	3	2	3	4	5	6	7	19	18	15	14	14	15	16	15	13	12	14	13	12	14	13	11	5	3	2	2	3	4	3	2	5
19.7	5	4	4	5	5	4	5	4	3	5	8	10	14	15	16	13	13	14	14	13	13	14	15	14	14	13	10	8	5	3	2	2	4	3	3	5	5
20.6	3	3	2	3	4	2	3	2	2	3	5	5	7	8	10	11	12	13	13	11	12	11	11	11	10	8	6	4	3	2	-	-	2	3	2	3	3
21.7	3	4	4	2	3	3	4	2	2	4	5	6	7	7	8	8	11	12	13	11	12	11	10	9	8	5	4	5	3	3	2	2	2	4	3	3	4
22.7a	4	5	5	4	5	4	5	4	2	5	6	6	7	7	8	9	10	12	14	13	13	12	11	11	11	10	7	8	5	4	3	2	3	4	4	5	4
23.7a	3	4	3	4	5	3	3	2	3	3	4	5	4	4	5	7	8	11	12	11	10	9	8	5	6	5	5	6	3	4	3	2	2	3	2	2	3
24.7a	3	4	4	4	4	2	3	4	3	5	4	5	X	X	8	9	10	8	10	12	11	11	10	7	6	5	8	5	5	6	5	3	3	4	4	3	4
25.x																																					
26.7	3	4	4	4	5	3	4	3	4	4	3	3	5	5	8	8	7	11	11	9	8	7	6	4	3	2	3	3	4	2	2	2	3	3	3	4	4
27.x																																					
28.7	5	4	4	4	4	3	4	2	3	4	5	7	15	11	10	9	8	11	15	13	11	11	10	8	6	5	6	5	5	3	2	2	3	3	3	5	4
29.x																																					
30.7	3	2	3	4	3	4	3	2	4	3	4	9	20	13	11	13	14	15	15	14	12	12	13	13	12	11	7	6	5	3	2	2	3	2	3	3	3
31.7	3	-	2	3	2	2	2	3	3	2	2	3	11	12	8	7	11	12	13	12	11	10	7	8	8	7	6	4	3	3	3	2	2	3	3	2	3

Coronal observations at Sacramento Peak, New Mexico, (6702A), east limb

Date UT	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Oct 1.7	-	-	-	-	-	-	-	-	-	2	3	5	8	4	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.x																																					
3.7	-	-	-	-	-	-	-	-	-	2	2	3	4	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.x																																					
5.x																																					
6.x																																					
7.x																																					
8.x																																					
9.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.7a	-	-	-	-	-	-	-	-	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.x																																					
26.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.x																																					
28.7	-	-	-	-	-	-	-	-	-	-	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.x																																					
30.7	-	-	-	-	-	-	-	-	-	2	2	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	-	-	-	-	2	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 92b

Coronal observations at Sacramento Peak, New Mexico, (6374A), west limb

Date UT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Oct 1.7	4	4	4	6	5	4	3	4	3	4	4	5	5	6	8	12	9	11	13	12	12	11	10	8	11	8	7	5	4	3	3	4	2	2	3	3	3
2.x																																					
3.7a	5	5	4	5	4	3	4	4	4	5	9	10	10	8	14	13	13	14	14	13	14	15	13	11	11	10	8	6	7	4	3	3	2	3	5	4	4
4.x																																					
5.x																																					
6.x																																					
7.x																																					
8.x																																					
9.7	4	3	3	4	3	4	4	3	4	5	6	7	8	14	8	5	8	12	11	10	11	10	9	8	4	3	4	5	7	6	4	3	3	4	4	4	4
10.7	5	5	5	4	4	3	4	3	5	5	4	5	13	12	7	8	11	12	11	12	12	11	8	6	3	2	3	5	6	8	4	4	2	4	3	4	5
11.7	4	3	3	2	3	3	2	3	4	5	4	2	4	8	4	5	11	12	12	11	10	8	7	5	4	4	3	3	2	3	5	2	2	2	3	4	4
12.7	4	4	4	3	3	3	4	4	5	6	7	5	6	8	7	8	16	17	18	16	15	14	11	12	14	20	9	8	5	6	5	4	3	4	5	5	4
13.8a	3	2	3	3	4	3	4	4	4	5	5	4	4	4	4	5	8	12	14	12	12	11	10	8	11	14	15	10	5	4	4	4	5	4	4	5	4
14.7a	4	4	4	3	4	3	4	3	5	6	7	8	8	7	8	9	11	13	14	15	15	15	14	14	18	36	28	12	6	4	4	4	5	4	4	6	5
15.6	4	3	2	3	3	2	2	-	-	2	3	4	5	5	4	5	7	9	8	9	9	10	11	7	6	26	20	16	4	3	2	2	2	3	2	3	3
16.6	4	4	5	4	3	2	3	4	4	4	5	6	7	8	7	8	12	14	15	14	16	18	13	11	11	20	34	14	4	4	3	4	2	2	2	3	3
17.7	6	5	4	5	4	3	3	4	5	6	8	10	11	13	12	13	14	15	16	16	17	17	14	13	11	18	36	16	6	3	4	5	4	4	4	3	3
18.7	5	6	4	5	4	3	4	2	5	6	7	14	16	15	14	15	16	14	15	14	13	13	14	15	13	13	25	20	8	5	4	3	3	5	3	5	4
19.7	5	5	4	5	4	3	2	3	5	7	8	8	15	16	14	14	13	14	13	11	11	12	13	14	14	13	14	14	10	5	4	3	4	5	4	4	5
20.6	3	2	3	2	3	3	2	2	5	6	2	5	11	16	11	11	10	10	13	10	8	5	6	5	5	4	6	5	4	4	3	3	3	2	2	2	3
21.7	4	4	4	3	3	2	2	3	4	5	4	5	10	13	10	10	9	11	12	10	9	8	8	9	10	9	5	4	5	3	2	4	5	3	2	2	3
22.7a	4	4	3	3	2	4	3	3	2	7	7	6	7	8	9	8	11	13	13	14	16	19	14	15	11	5	6	5	6	4	3	2	3	4	4	3	4
23.7a	3	4	3	3	3	3	2	2	2	5	4	4	4	5	7	8	7	8	7	6	9	25	11	10	8	7	4	4	4	3	2	2	2	3	4	4	3
24.7a	4	5	4	4	3	2	3	3	3	4	4	4	3	5	11	12	13	14	15	11	10	23	20	8	8	7	5	4	4	3	3	2	2	3	4	4	3
25.x																																					
26.7	4	4	3	3	3	2	3	2	3	3	4	5	6	7	8	9	11	12	14	13	10	9	10	9	8	7	7	5	4	3	3	2	2	2	2	3	3
27.x																																					
28.7	4	3	4	3	2	3	2	3	3	3	3	4	5	4	5	8	10	11	12	13	12	11	10	8	6	5	6	4	4	2	3	2	3	3	4	4	5
29.x																																					
30.7	3	2	3	3	2	3	2	-	2	3	5	4	4	5	8	11	14	13	13	12	12	10	7	8	7	5	7	5	4	3	2	2	3	2	2	3	3
31.7	3	3	2	2	3	3	3	2	2	3	4	5	4	3	6	9	9	11	11	12	11	5	5	8	7	4	4	4	3	2	-	-	3	2	3	2	3

Table 93b

Coronal observations at Sacramento Peak, New Mexico, (6702A), west limb

Date UT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Oct 1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.x																																					
3.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.x																																					
5.x																																					
6.x																																					
7.x																																					
8.x																																					
9.7	-	-	-	-	-	-	-	-	-	-	-	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.7	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	2	-	-	-	-	-	-	-	-	-	-
13.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4	3	-	-	-	-	-	-	-	-	-
16.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	6	3	2	-	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	5	6	2	-	-	-	-	-	-	-	-
18.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	4	2	-	-	-	-	-	-	-
19.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	-	-	-	-	-	-	-
20.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.x																																					
26.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.x																																					
28.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29.x																																					
30.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 94

Zürich Provisional Relative Sunspot Numbers

October 1954

Date	R_Z*	Date	R_Z*
1	0	17	22
2	7	18	7
3	14	19	8
4	8	20	14
5	7	21	8
6	0	22	8
7	0	23	14
8	0	24	8
9	0	25	8
10	0	26	7
11	0	27	0
12	7	28	0
13	7	29	0
14	15	30	0
15	17	31	0
16	24	Mean:	6.8

* Dependent on observations at Zürich Observatory and its stations at Locarno and Arosa.

Table 95

American Relative Sunspot Numbers

September 1954

Date	R_A'	Date	R_A'
1	0	17	0
2	0	18	0
3	0	19	0
4	2	20	0
5	2	21	0
6	1	22	0
7	0	23	0
8	0	24	0
9	0	25	0
10	0	26	0
11	0	27	0
12	0	28	0
13	0	29	0
14	1	30	1
15	1	Mean:	0.3
16	0		

Table 96

Solar Flares, October 1954

No solar flares were reported for the month of October.

Table 97

Indices of Geomagnetic Activity for September 1954

Preliminary values of international character-figures, C;
Geomagnetic planetary three-hour-range indices, Kp;
Magnetically selected quiet and disturbed days

Gr. Day 1954	C	Values Kp Three-hour interval 1	2	3	4	5	6	7	8	Sum	Final Selected Days
1	1.2	3-	3o	2+	3+	5-	4o	4+	6-	30o	Five
2	1.0	5+	4+	4o	4-	1o	3-	2+	3+	27-	Quiet
3	1.2	2o	2+	3o	4+	4o	4+	4+	5-	29o	
4	1.0	4-	3+	3o	3+	3+	4o	1o	2o	24-	8
5	0.8	3o	3o	3o	3+	3-	2-	2o	1+	20o	12
											13
6	1.3	3-	2+	2+	1+	2-	4+	6-	4o	24+	19
7	1.0	3o	4-	4-	3o	2+	3+	3+	3o	25+	23
8	0.5	3o	2o	1-	1+	2o	3-	3o	1o	16-	
9	0.8	1+	4o	4-	2-	3+	3o	1+	3-	21o	
10	0.5	2-	3+	3o	3-	2+	2o	1+	2o	18+	
11	0.8	2-	3-	3o	3+	3o	3+	2-	2o	21-	Five
12	0.2	0+	1-	2-	3-	2-	1+	1+	2o	12-	Disturbed
13	0.7	2o	1-	2-	2-	1o	1-	1o	4+	13o	
14	1.4	4-	6-	4+	3+	5o	3+	2o	4+	32-	1
15	0.9	2+	2+	3+	4o	4-	3o	2-	2+	23-	14
											20
16	1.0	4+	4o	3+	4-	4o	3o	3o	2+	28-	21
17	0.7	4o	3-	2-	2o	0+	1-	2+	3-	16+	29
18	0.9	4o	2+	3+	3+	1o	3-	3-	3o	22+	
19	0.5	2+	3-	3o	1+	2-	2o	2+	2+	18-	
20	1.6	4-	4o	4o	3o	5-	6o	7-	5-	37-	
21	1.3	4o	4+	4-	4o	4-	4+	4+	3-	31o	Ten
22	0.7	2+	2+	2+	3-	4-	2+	2+	2-	20-	Quiet
23	0.3	2-	1o	3o	3+	2o	1+	1o	1o	14+	
24	0.6	2o	2o	2-	2-	1+	3-	2o	4o	17+	8
25	1.0	3-	3+	4-	3-	3o	3o	4+	2+	25o	10
											12
26	0.5	3o	3-	3o	2o	2+	2-	2+	2-	19-	13
27	0.8	2-	2o	2-	2o	2-	3o	4o	3+	19+	17
28	0.9	5o	4-	3+	3-	3o	2o	1+	2+	23+	19
29	1.4	4o	4o	3-	4-	3-	5-	5o	5+	32o	22
30	1.0	2-	4o	4-	4-	2+	2+	4-	4o	25+	23
											24
Mean:	0.88										26

Table 98

Sudden Ionosphere Disturbances Observed at Washington, D. C.

October 1954

No sudden ionosphere disturbances were observed during the month of October.

Note: Observers are invited to send to the CRPL information on times of beginning and end of sudden ionosphere disturbances for publication as above. Address letters to the Central Radio Propagation Laboratory, National Bureau of Standards, Boulder, Colorado; Attention: Mr. Vaughn Agy.

ERRATUM

Graph superseding corresponding graph in fig. 40, p. 61, CRPL-F122

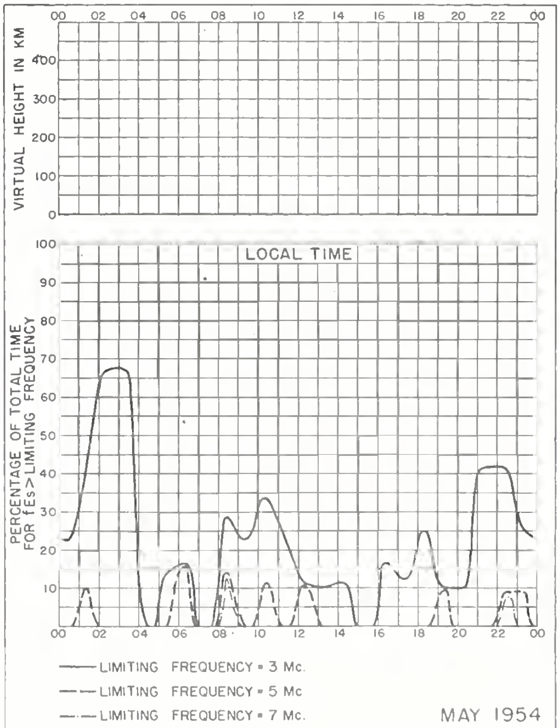


Fig. A. KIRUNA, SWEDEN (67.8°N, 20.3°E)

GRAPHS OF IONOSPHERIC DATA

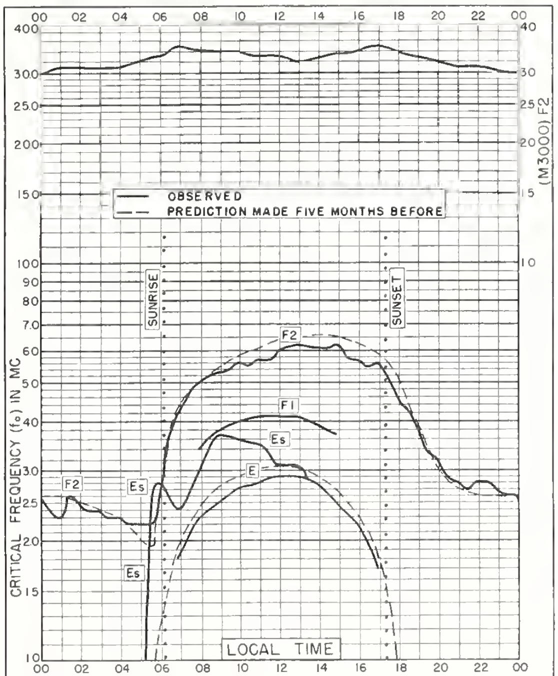


Fig. 1. WASHINGTON, D. C.
38.7°N, 77.1°W OCTOBER 1954

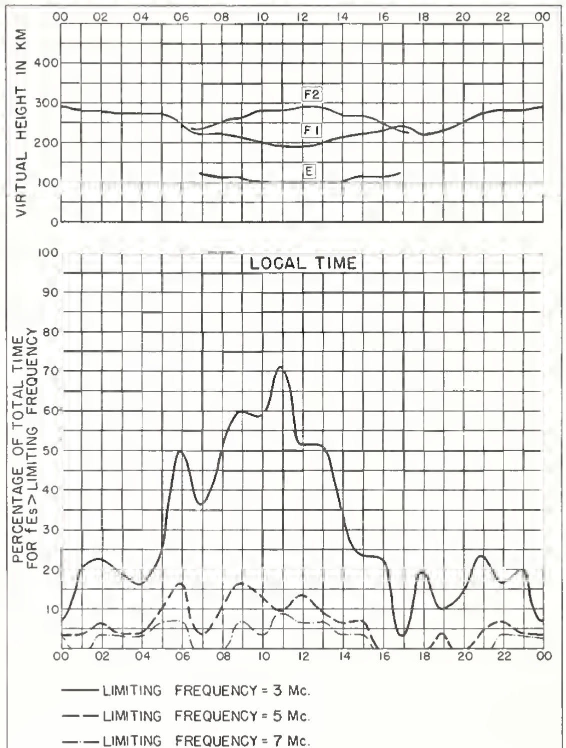


Fig. 2. WASHINGTON, D. C. OCTOBER 1954

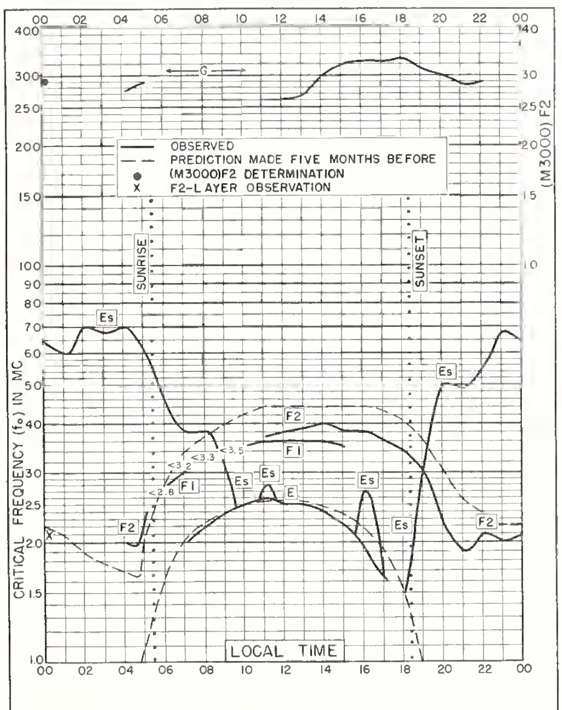


Fig. 3. FAIRBANKS, ALASKA
64.9°N, 147.8°W SEPTEMBER 1954

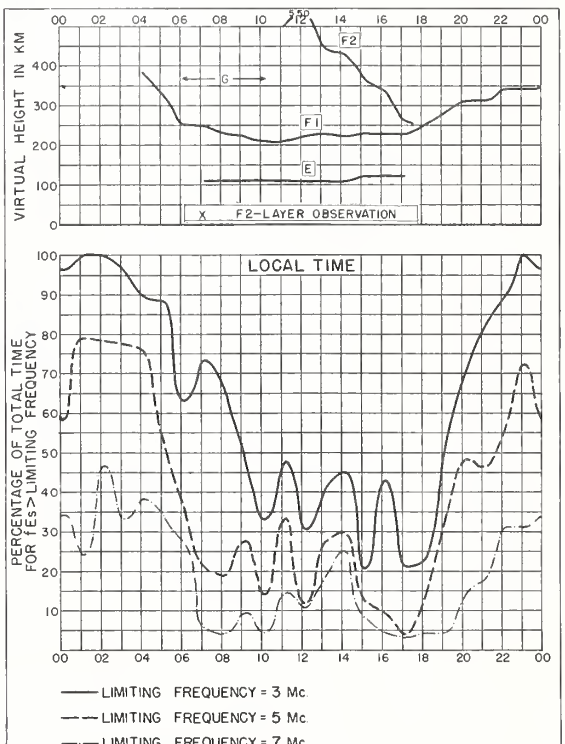


Fig. 4. FAIRBANKS, ALASKA SEPTEMBER 1954

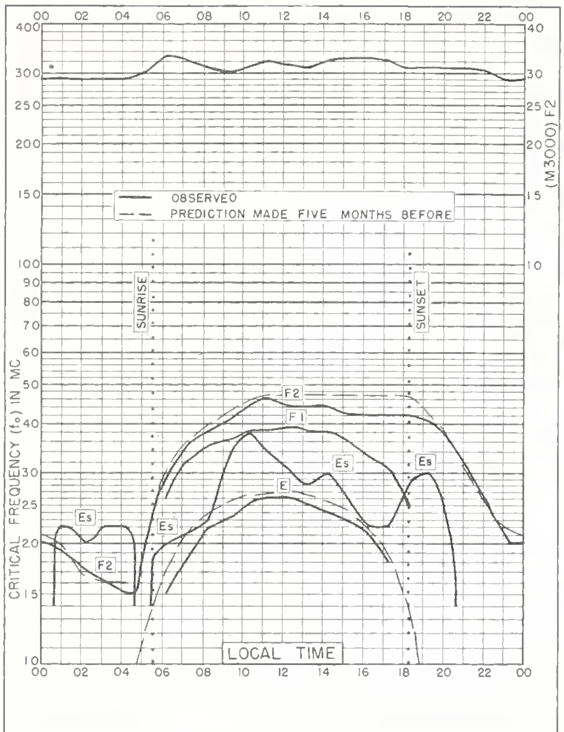


Fig. 5. UPSALA, SWEDEN
59.8°N, 17.6°E SEPTEMBER 1954

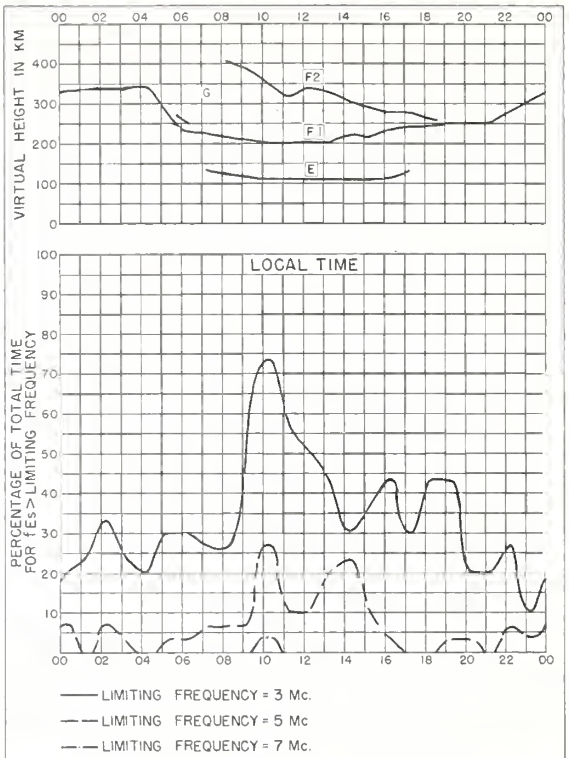


Fig. 6. UPSALA, SWEDEN SEPTEMBER 1954

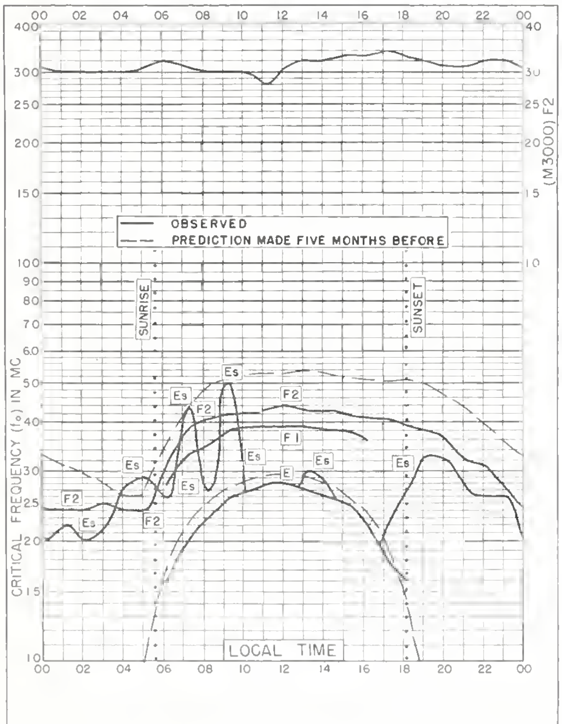


Fig. 7. ADAK, ALASKA
51.9°N, 176.6°W SEPTEMBER 1954

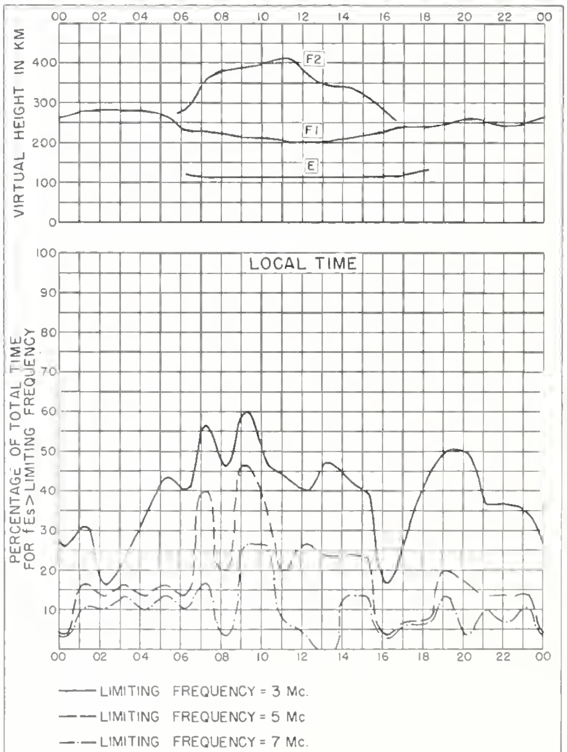


Fig. 8. ADAK, ALASKA SEPTEMBER 1954

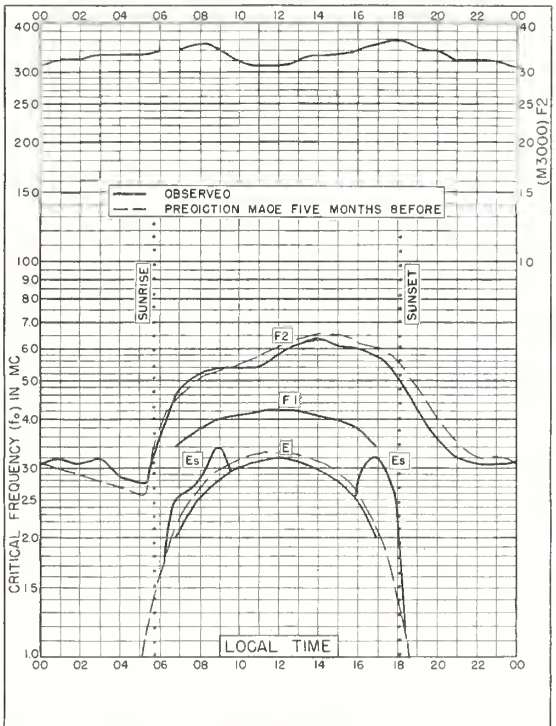
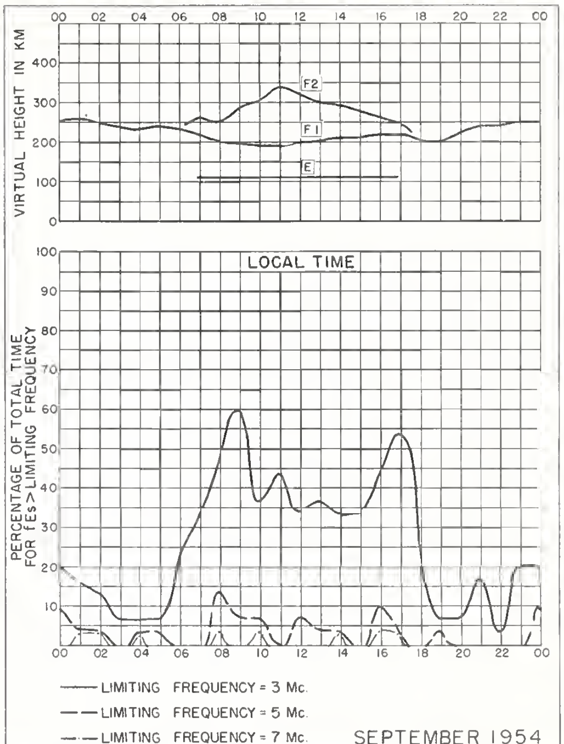


Fig. 9. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W SEPTEMBER 1954



SEPTEMBER 1954
Fig. 10. WHITE SANDS, NEW MEXICO

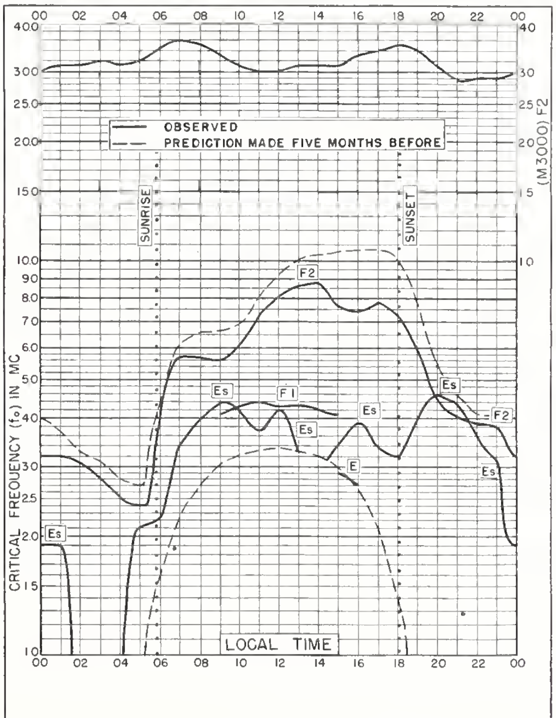


Fig. 11. OKINAWA I.
26.3°N, 127.8°E SEPTEMBER 1954

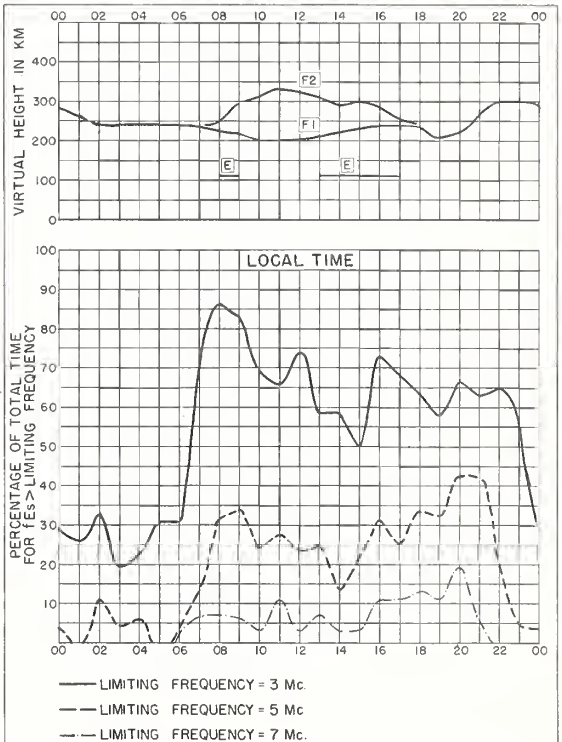


Fig. 12. OKINAWA I. SEPTEMBER 1954

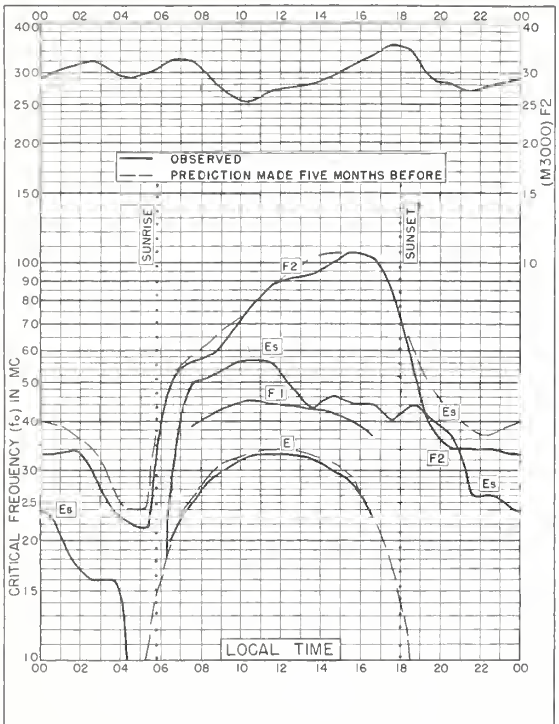


Fig. 13. MAUI, HAWAII 20.8°N, 156.5°W SEPTEMBER 1954

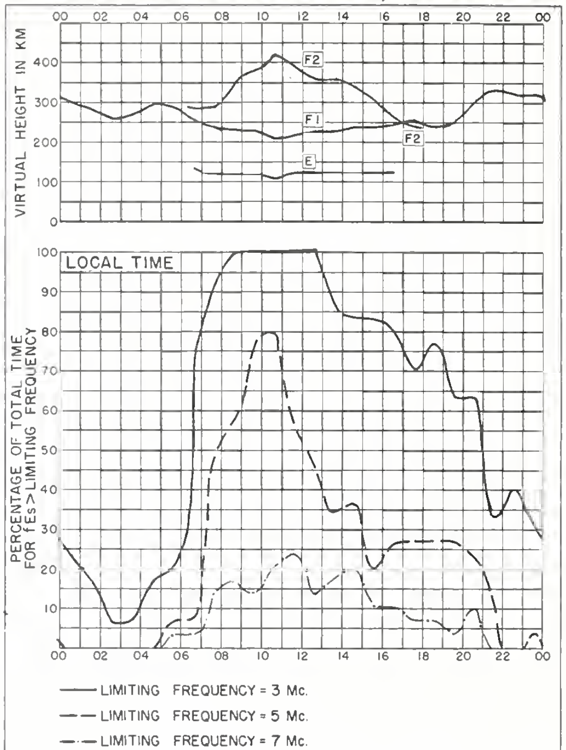


Fig. 14. MAUI, HAWAII SEPTEMBER 1954

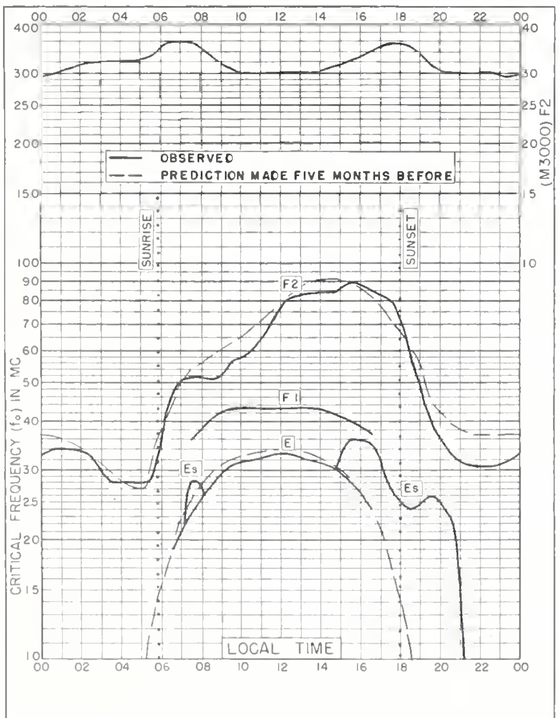


Fig. 15. PUERTO RICO, W.I. 18.5°N, 67.2°W SEPTEMBER 1954

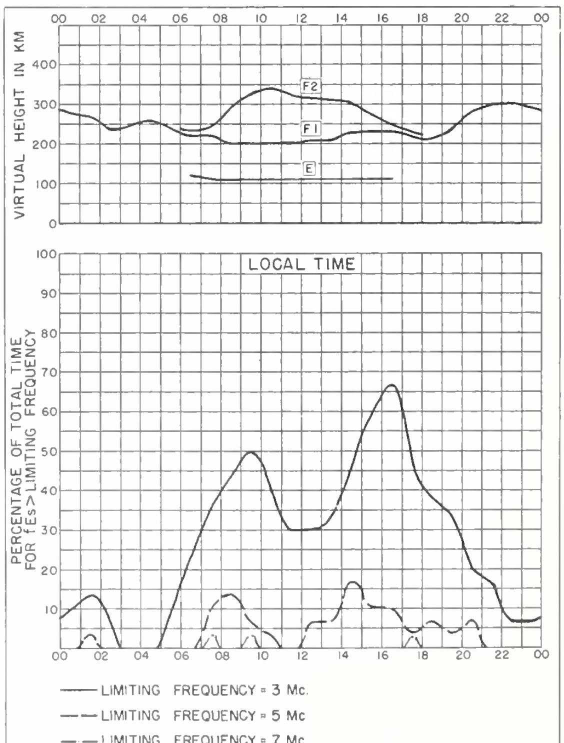


Fig. 16. PUERTO RICO, W.I. SEPTEMBER 1954

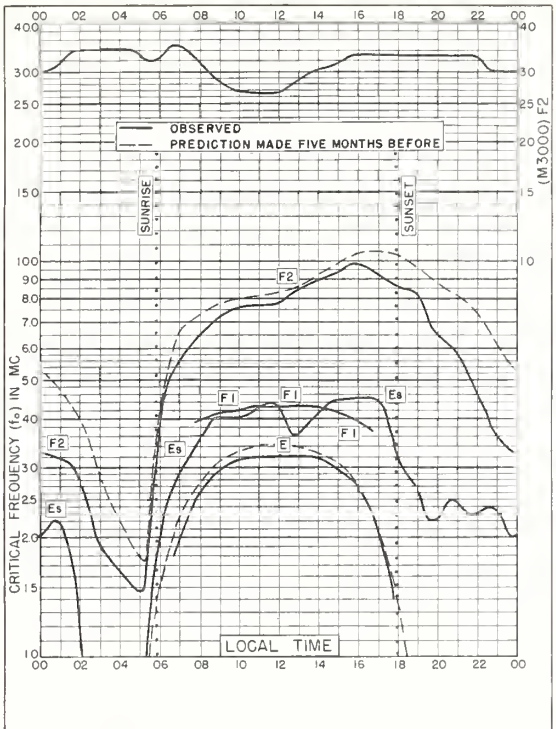


Fig. 17. GUAM I.
13.6°N, 144.9°E SEPTEMBER 1954

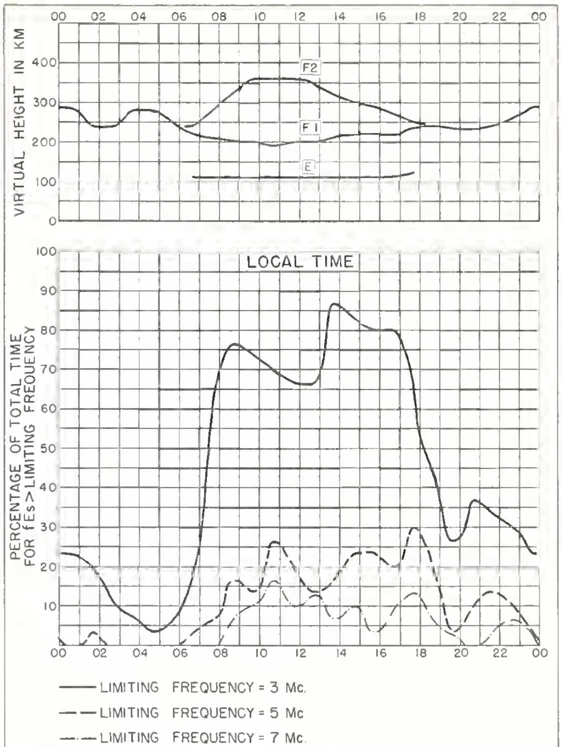


Fig. 18. GUAM I. SEPTEMBER 1954

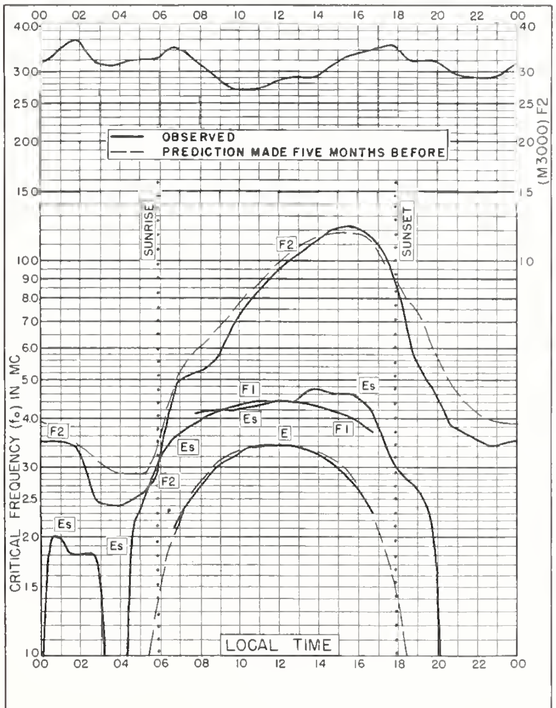
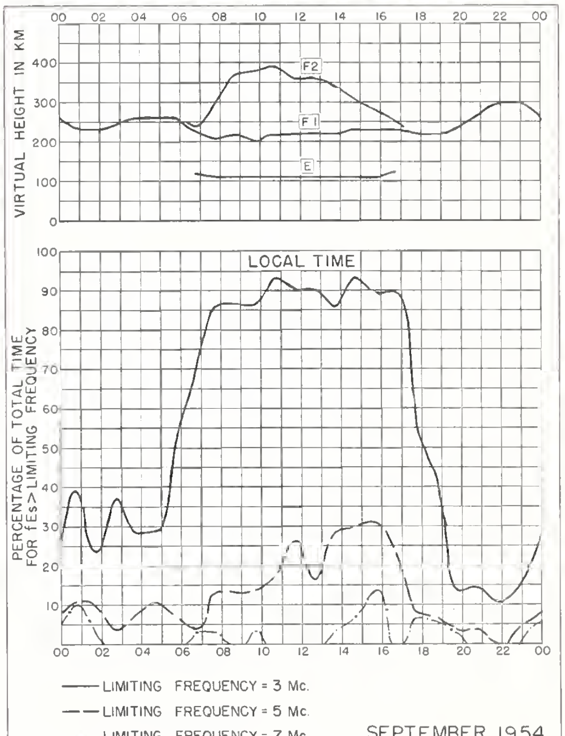


Fig. 19. PANAMA CANAL ZONE
9.4°N, 79.9°W SEPTEMBER 1954



SEPTEMBER 1954
Fig. 20. PANAMA CANAL ZONE

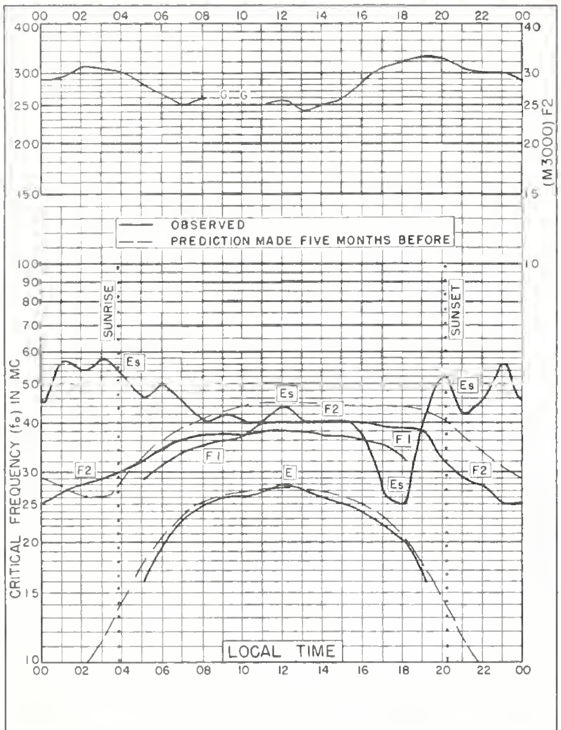


Fig. 21. FAIRBANKS, ALASKA
64.9°N, 147.8°W AUGUST 1954

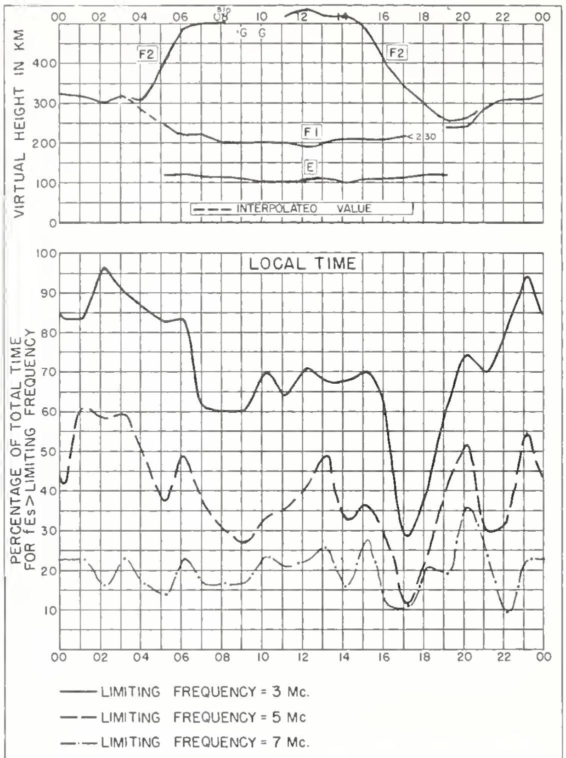


Fig. 22. FAIRBANKS, ALASKA AUGUST 1954

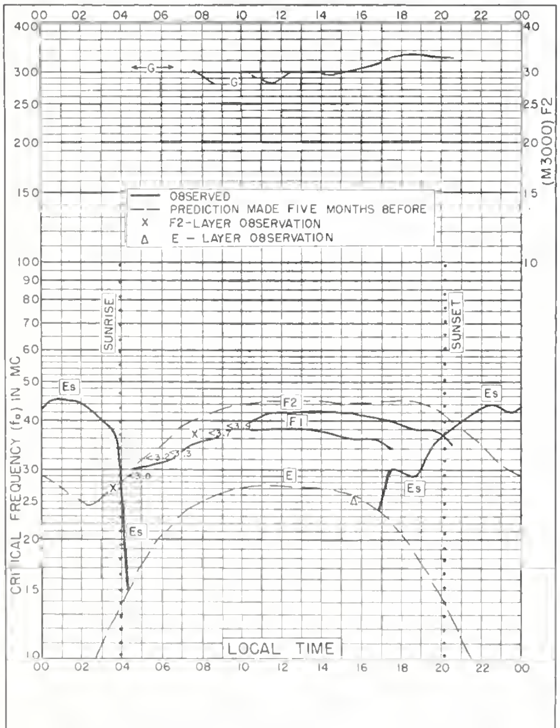


Fig. 23. REYKJAVIK, ICELAND
64.1°N, 21.8°W AUGUST 1954

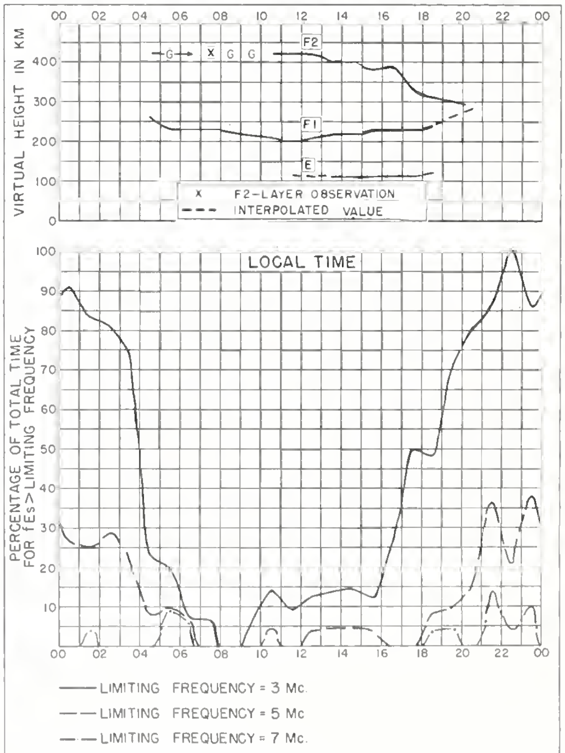


Fig. 24. REYKJAVIK, ICELAND AUGUST 1954

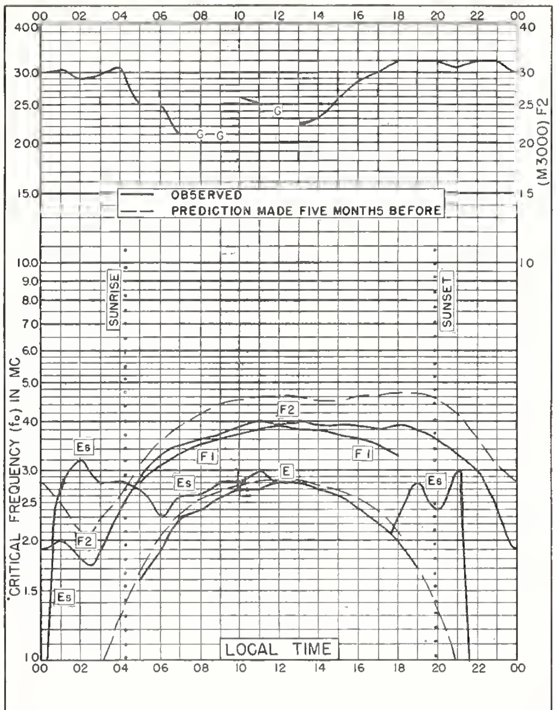


Fig. 25. ANCHORAGE, ALASKA
61.2°N, 149.9°W AUGUST 1954

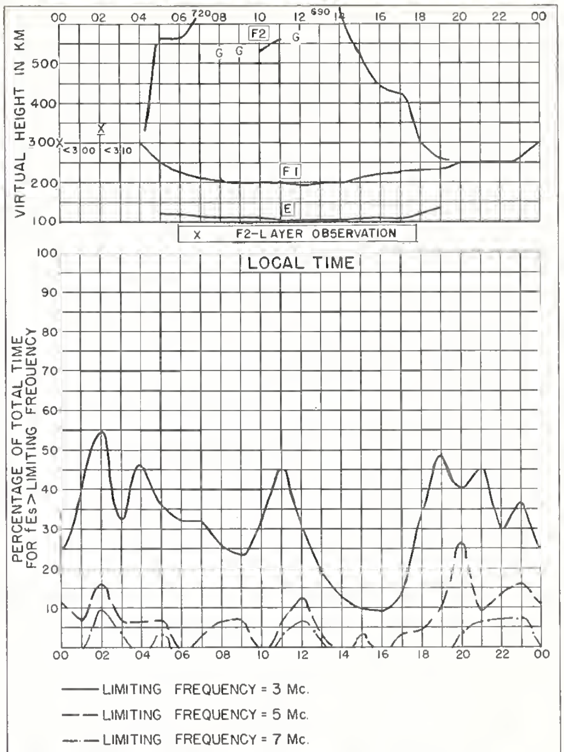


Fig. 26. ANCHORAGE, ALASKA AUGUST 1954

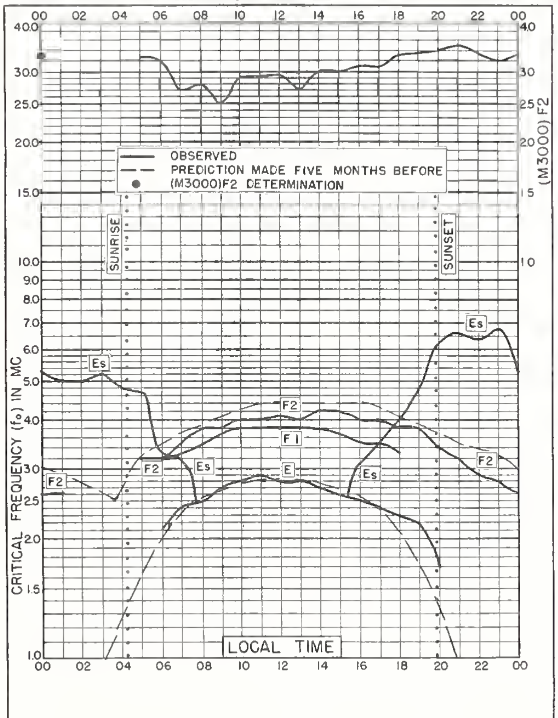
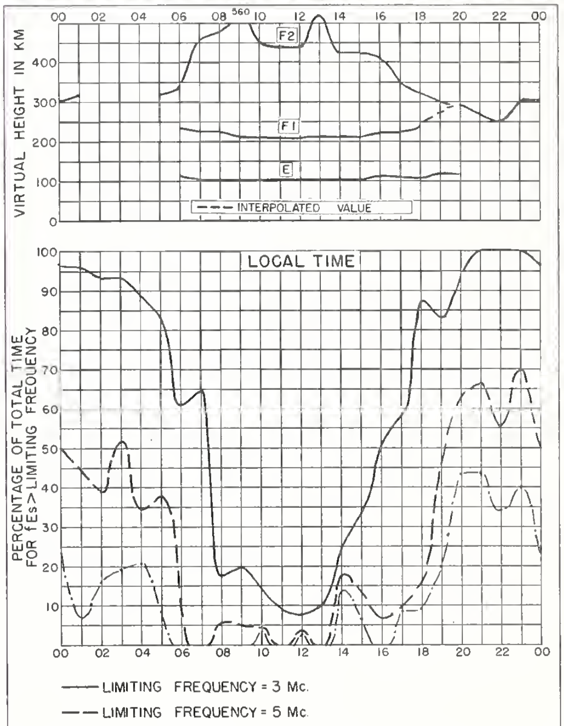


Fig. 27. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W AUGUST 1954



AUGUST 1954
Fig. 28. NARSARSSUAK, GREENLAND

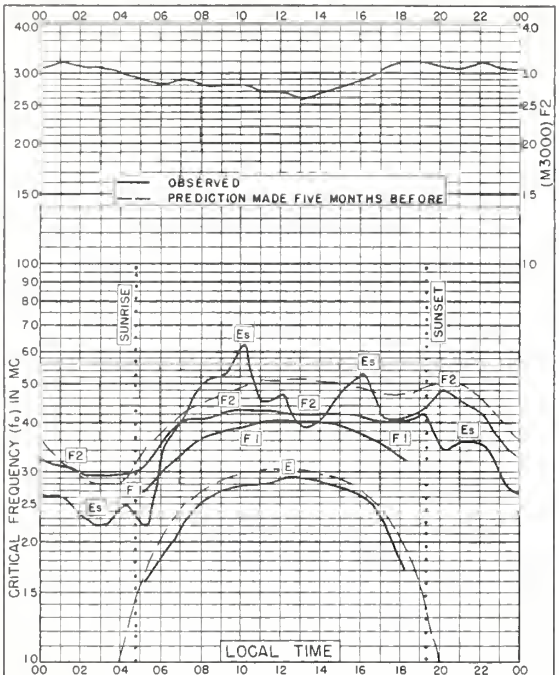


Fig. 29. ADAK, ALASKA
51.9°N, 176.6°W AUGUST 1954

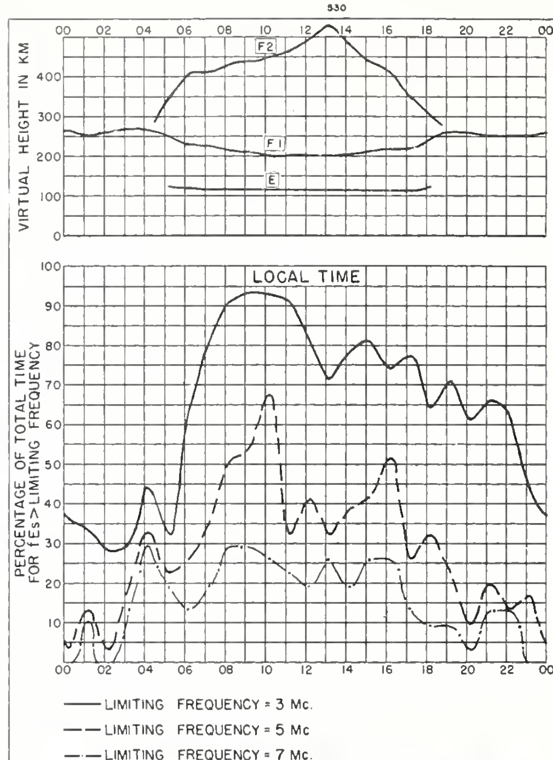


Fig. 30. ADAK, ALASKA AUGUST 1954

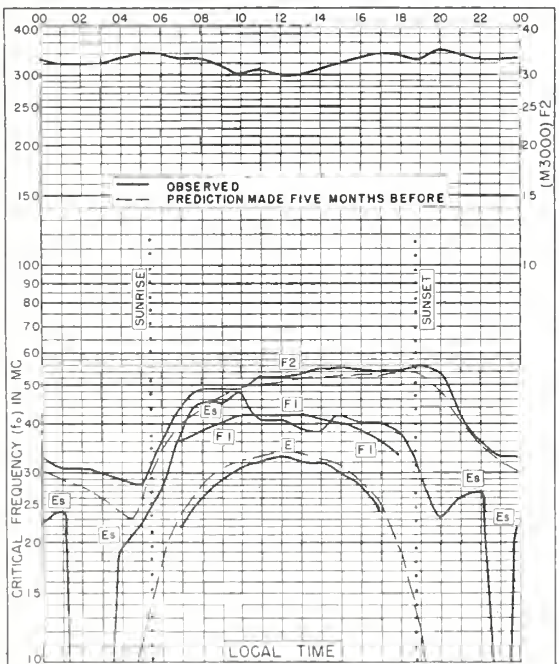
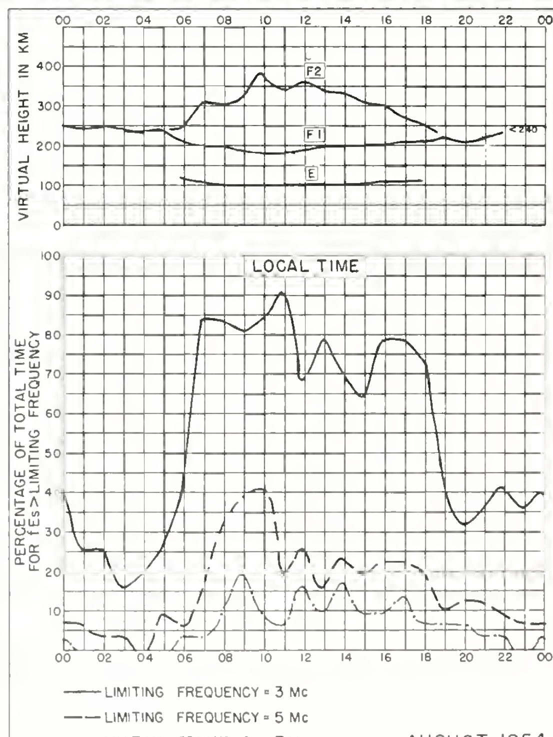


Fig. 31. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W AUGUST 1954



AUGUST 1954
Fig. 32. WHITE SANDS, NEW MEXICO

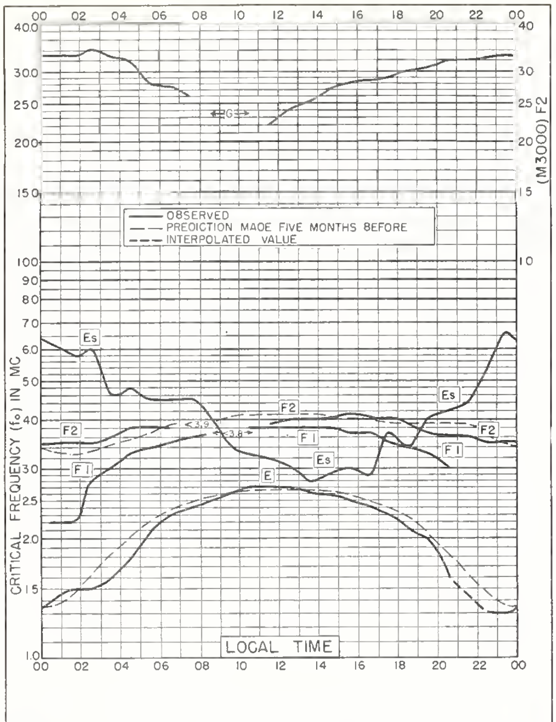


Fig. 33. POINT BARROW, ALASKA
71.3°N, 156.8°W JULY 1954

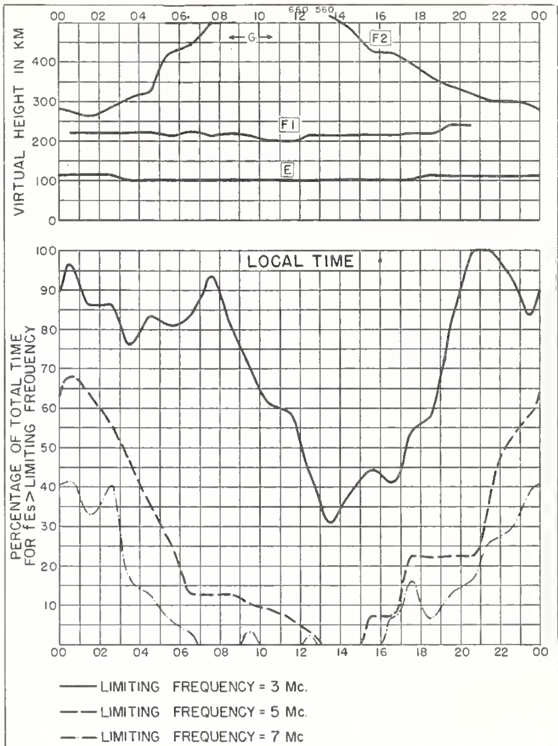


Fig. 34. POINT BARROW, ALASKA JULY 1954

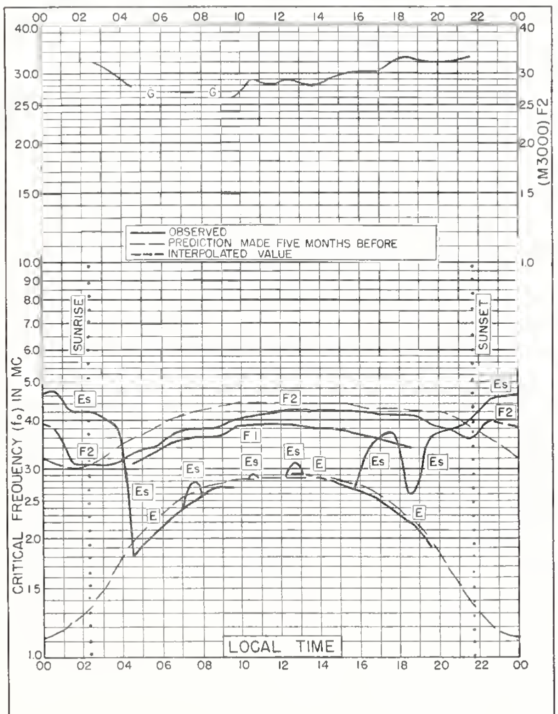


Fig. 35. REYKJAVIK, ICELAND
64.1°N, 21.8°W JULY 1954

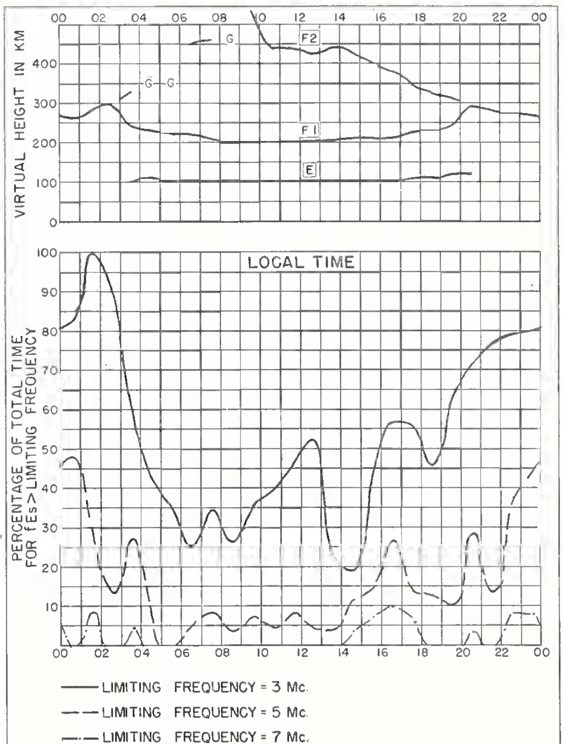


Fig. 36. REYKJAVIK, ICELAND JULY 1954

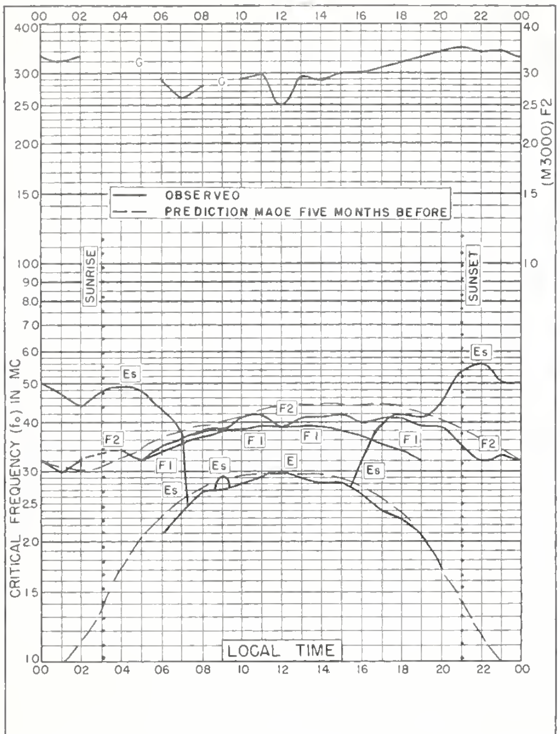


Fig. 37. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W JULY 1954

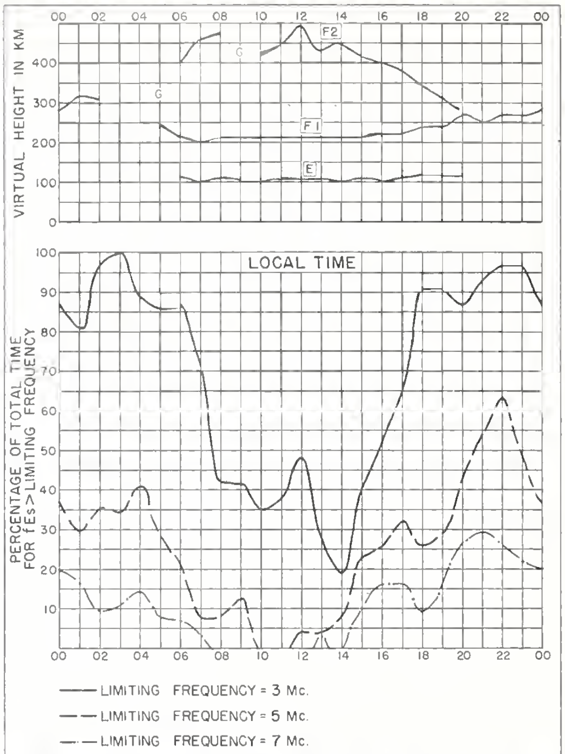


Fig. 38. NARSARSSUAK, GREENLAND JULY 1954

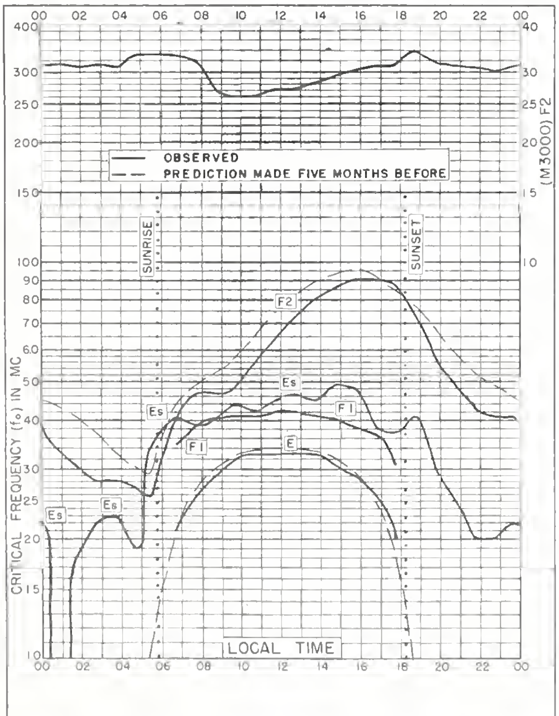


Fig. 39. PANAMA CANAL ZONE
9.4°N, 79.9°W JULY 1954

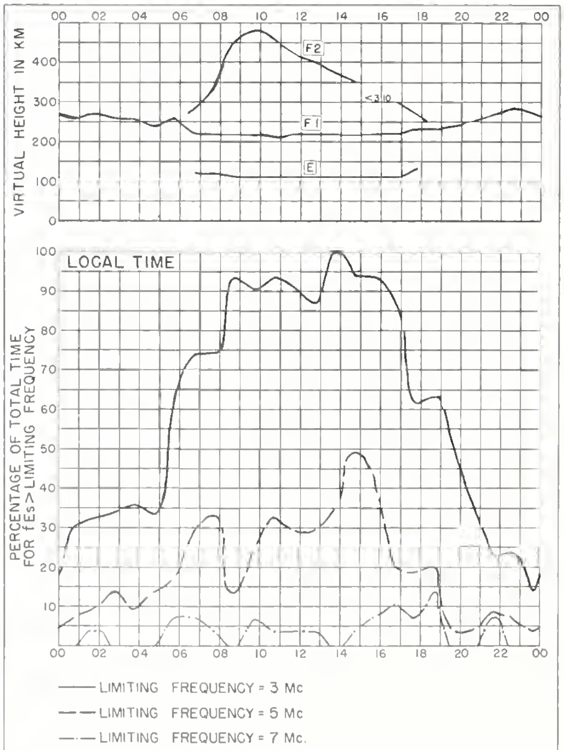


Fig. 40. PANAMA CANAL ZONE JULY 1954

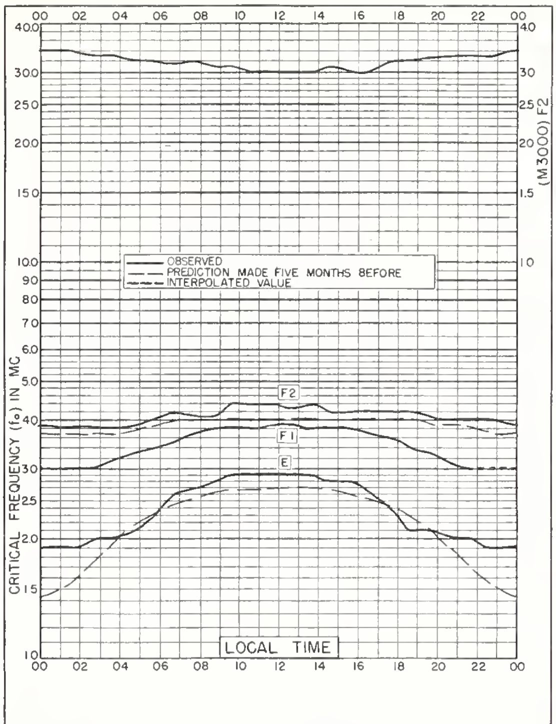


Fig. 41. RESOLUTE BAY, CANADA
74.7°N, 94.9°W JUNE 1954

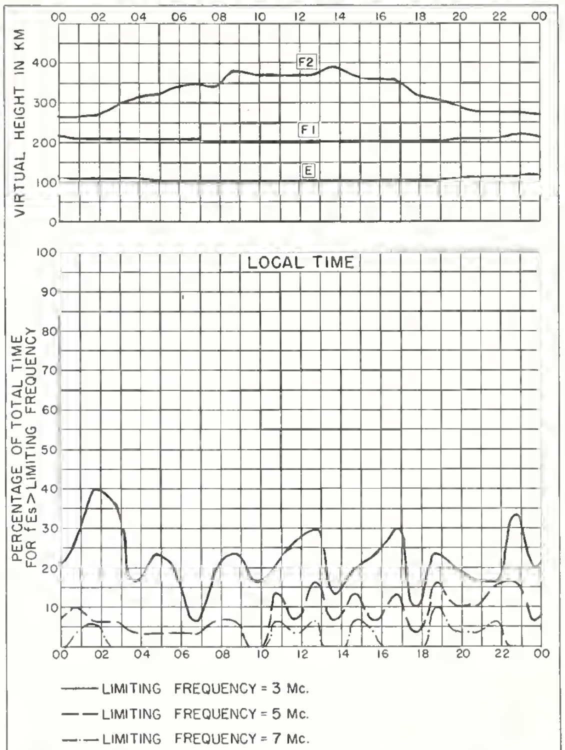


Fig. 42. RESOLUTE BAY, CANADA JUNE 1954

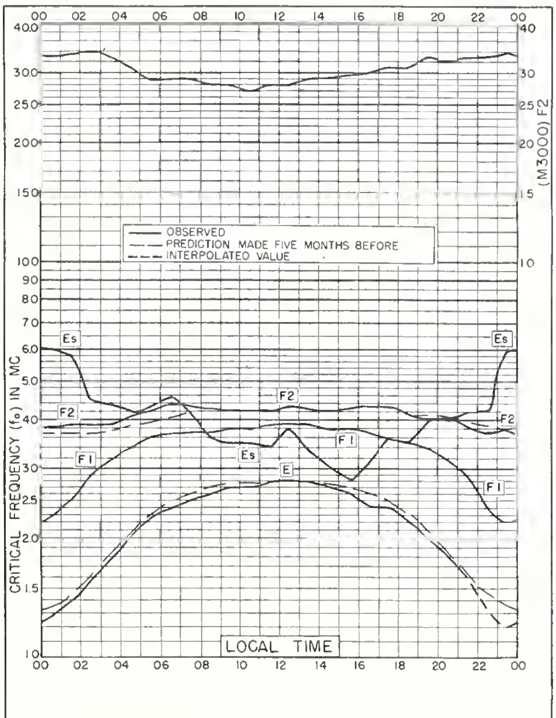


Fig. 43. POINT BARROW, ALASKA
71.3°N, 156.8°W JUNE 1954

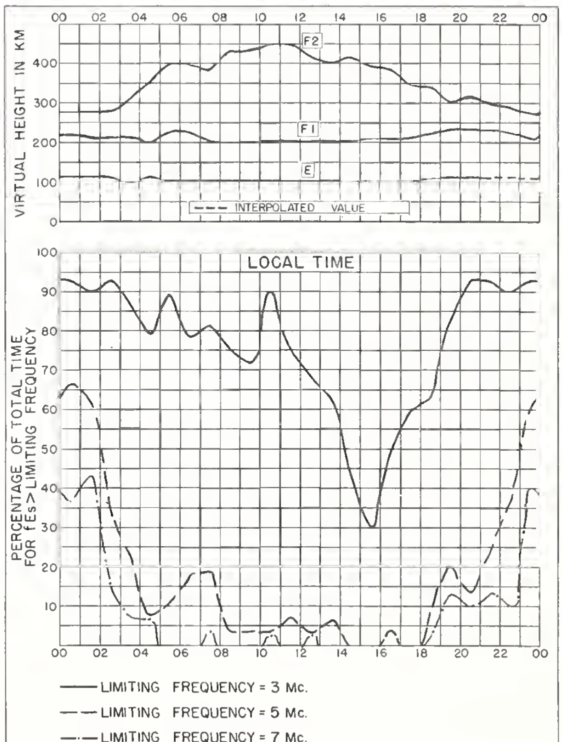


Fig. 44. POINT BARROW, ALASKA JUNE 1954

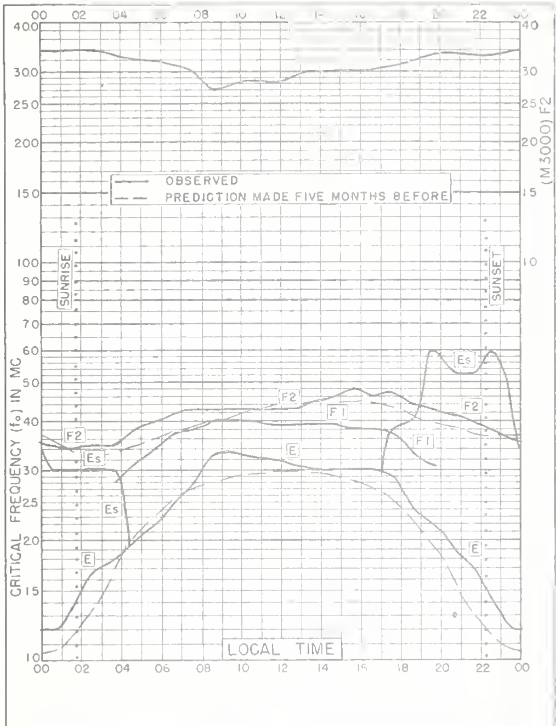


Fig. 45. BAKER LAKE, CANADA
64.3°N, 96.0°W JUNE 1954

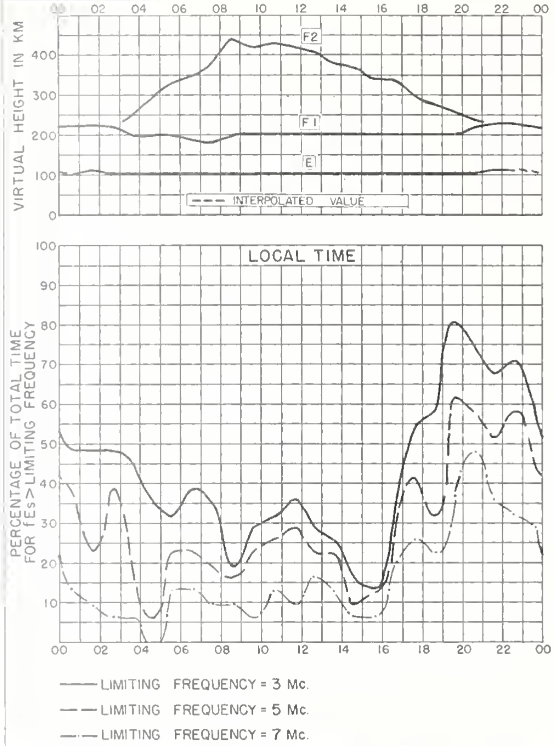


Fig. 46. BAKER LAKE, CANADA JUNE 1954

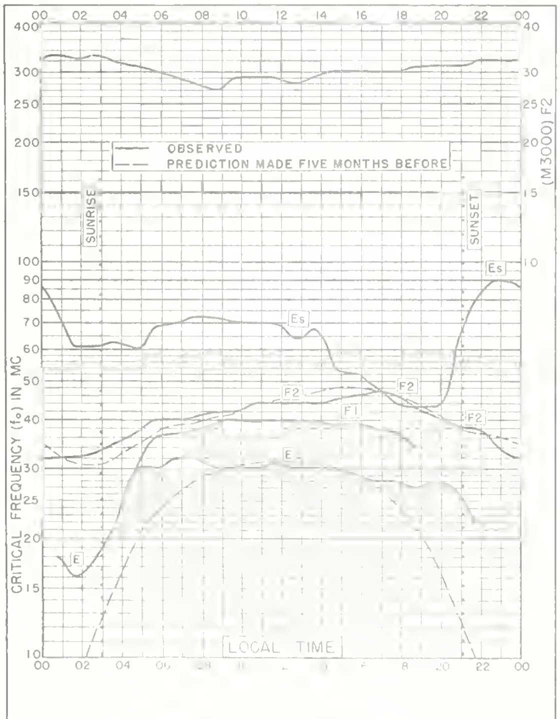


Fig. 47. CHURCHILL, CANADA
58.8°N, 94.2°W JUNE 1954

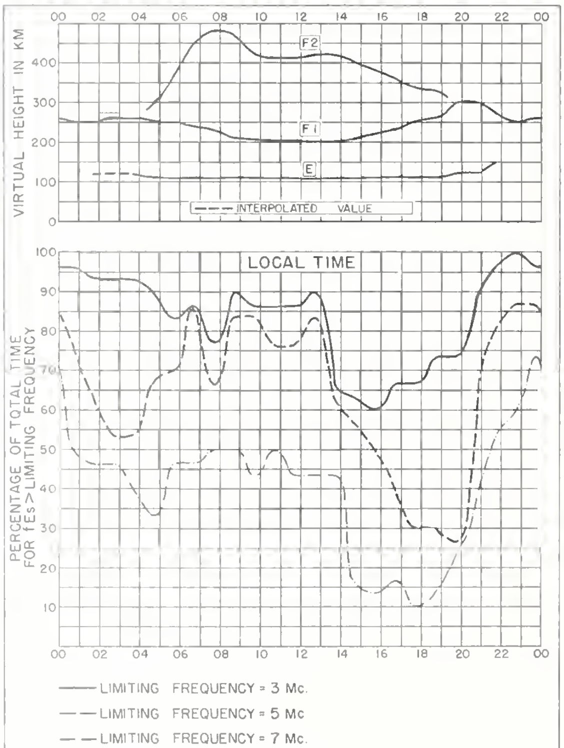


Fig. 48. CHURCHILL, CANADA JUNE 1954

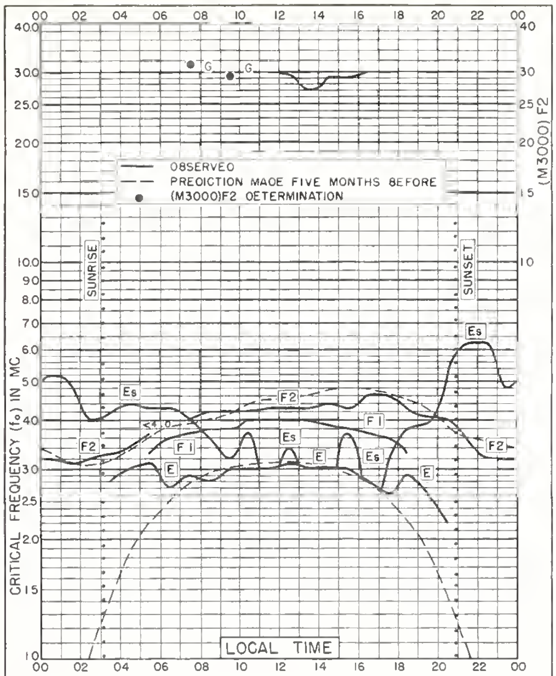


Fig. 49. FORT CHIMO, CANADA
58.1°N, 68.3°W JUNE 1954

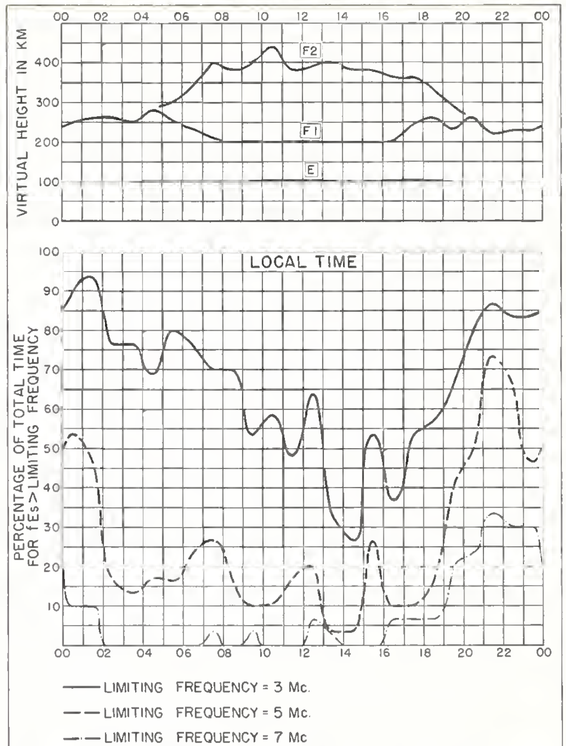


Fig. 50. FORT CHIMO, CANADA JUNE 1954

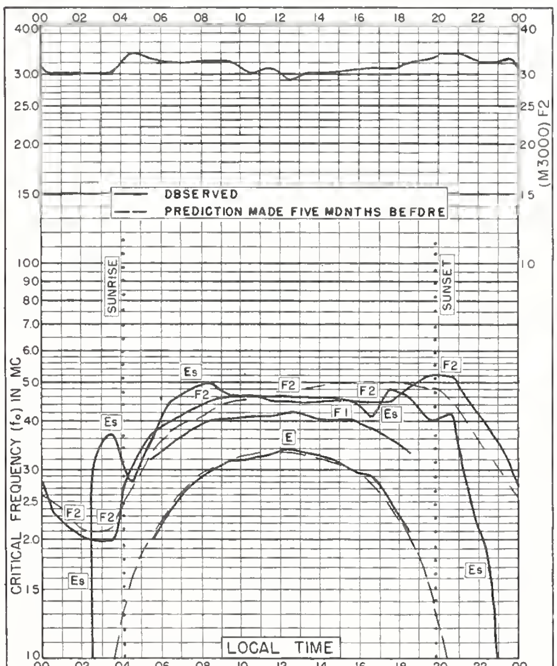


Fig. 51. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W JUNE 1954

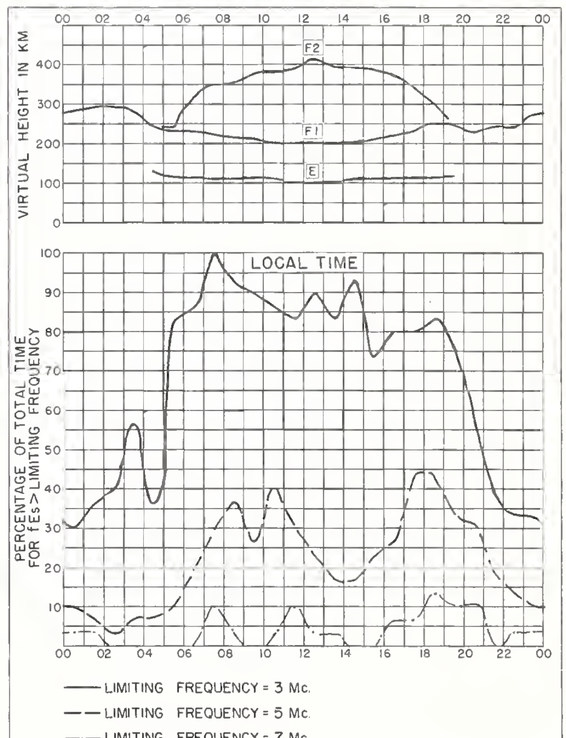


Fig. 52. ST. JOHN'S, NEWFOUNDLAND JUNE 1954

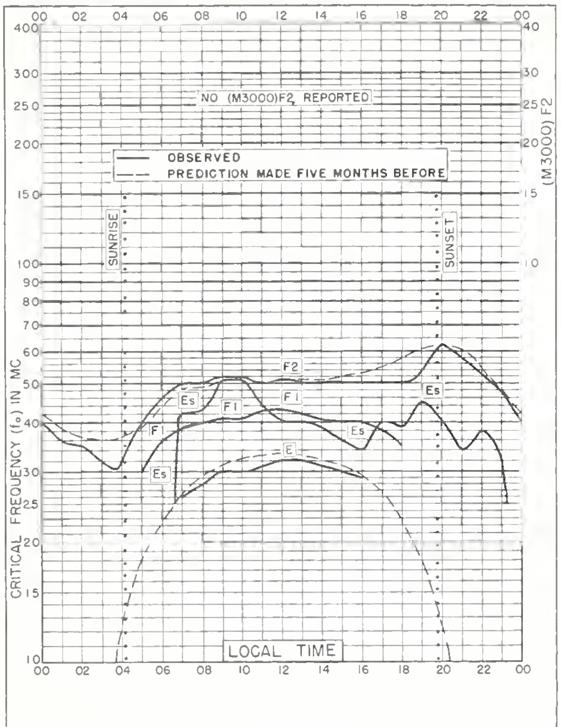


Fig. 53. GRAZ, AUSTRIA
47.1°N, 15.5°E JUNE 1954

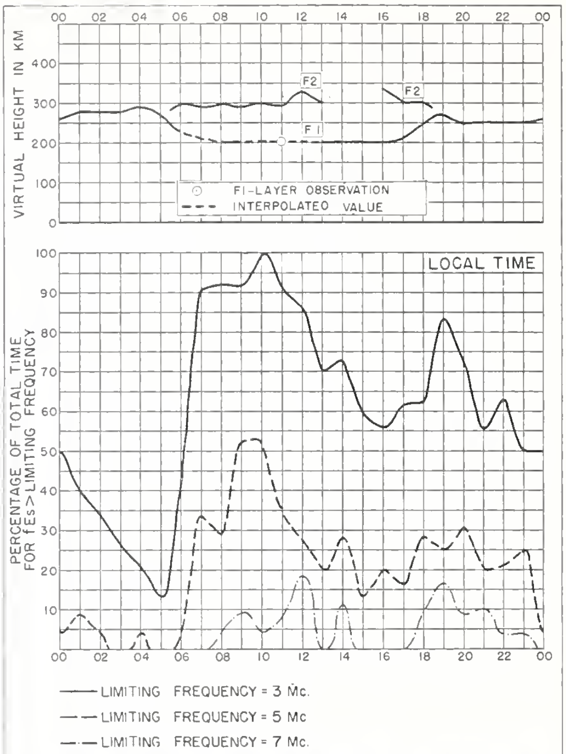


Fig. 54. GRAZ, AUSTRIA JUNE 1954

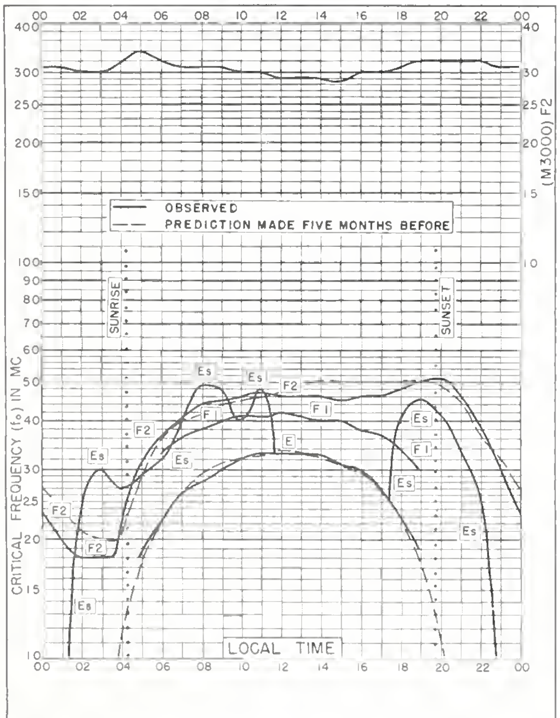


Fig. 55. OTTAWA, CANADA
45.4°N, 75.9°W JUNE 1954

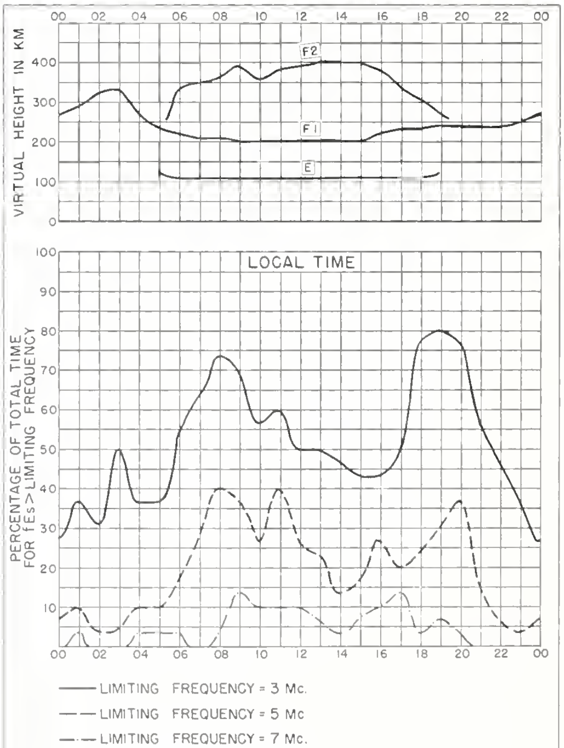


Fig. 56. OTTAWA, CANADA JUNE 1954

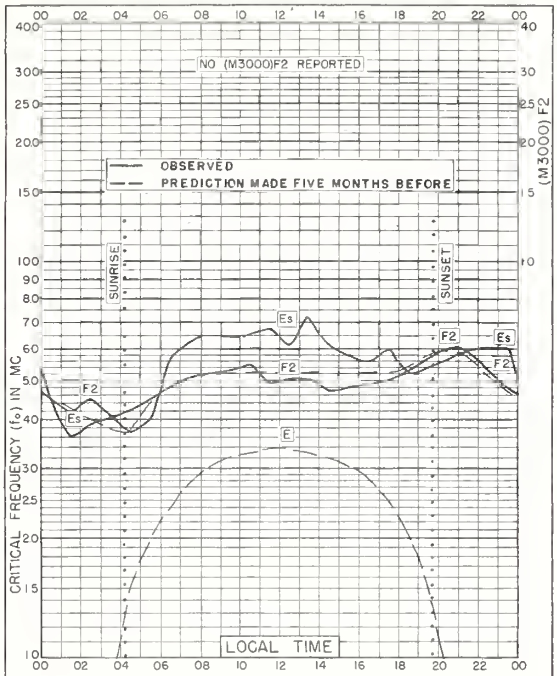


Fig. 57. WAKKANAI, JAPAN
45. 4°N, 141. 7°E JUNE 1954

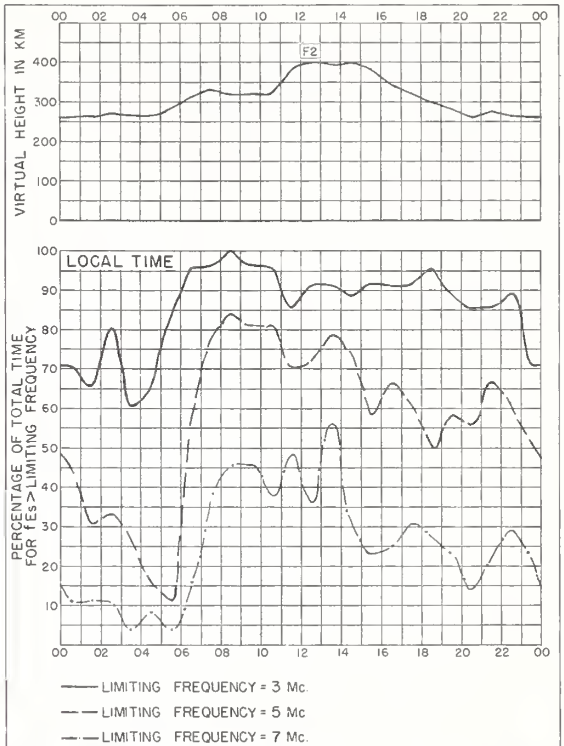


Fig. 58. WAKKANAI, JAPAN JUNE 1954

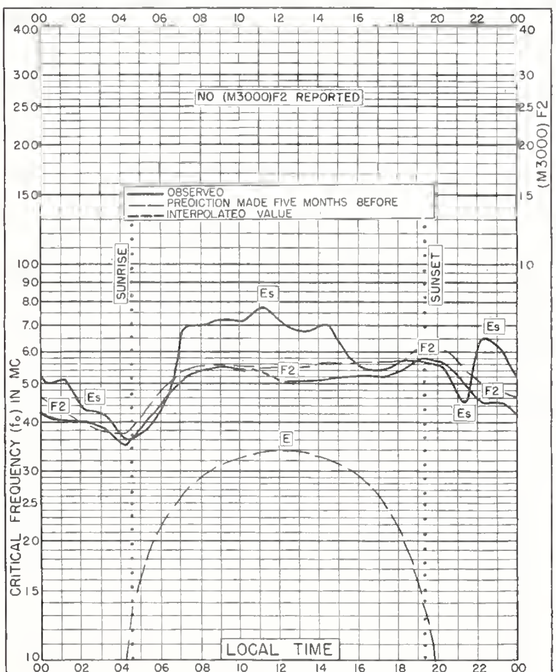


Fig. 59. AKITA, JAPAN
39.7°N, 140.1°E JUNE 1954

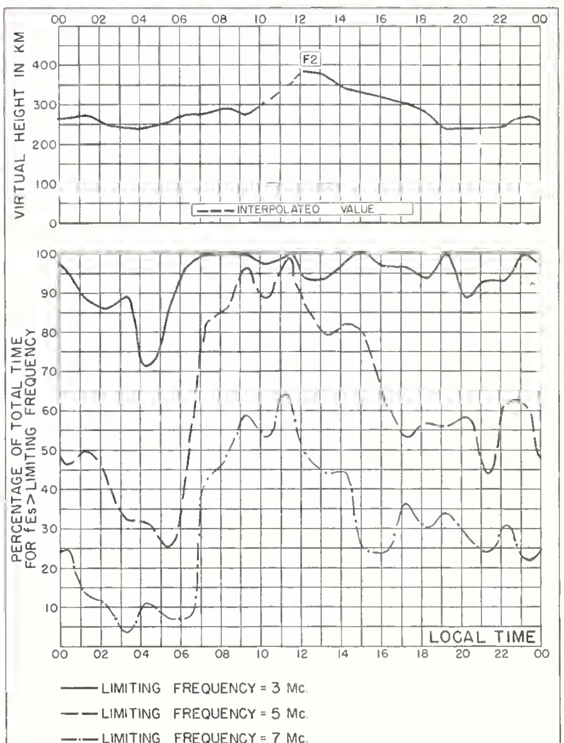


Fig. 60. AKITA, JAPAN JUNE 1954

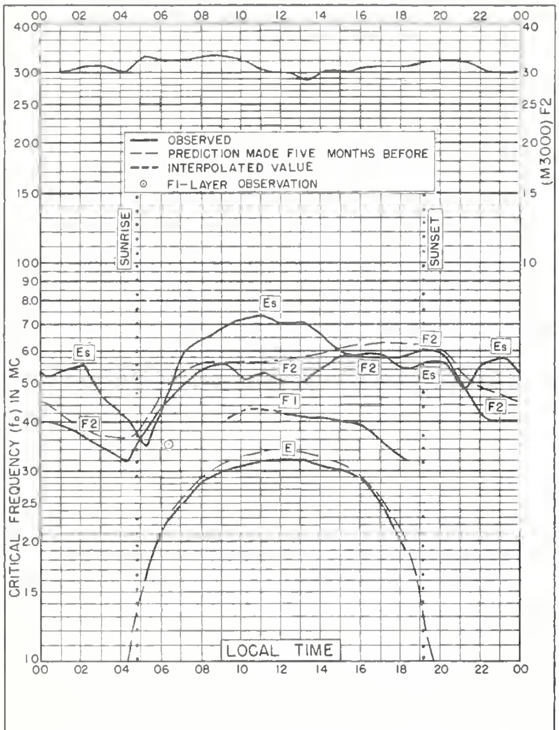


Fig. 61. TOKYO, JAPAN
35.7°N, 139.5°E JUNE 1954

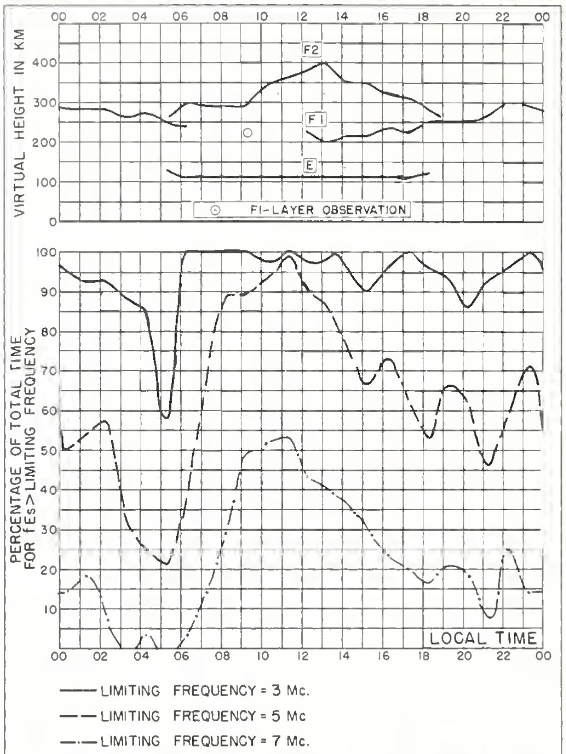


Fig. 62. TOKYO, JAPAN JUNE 1954

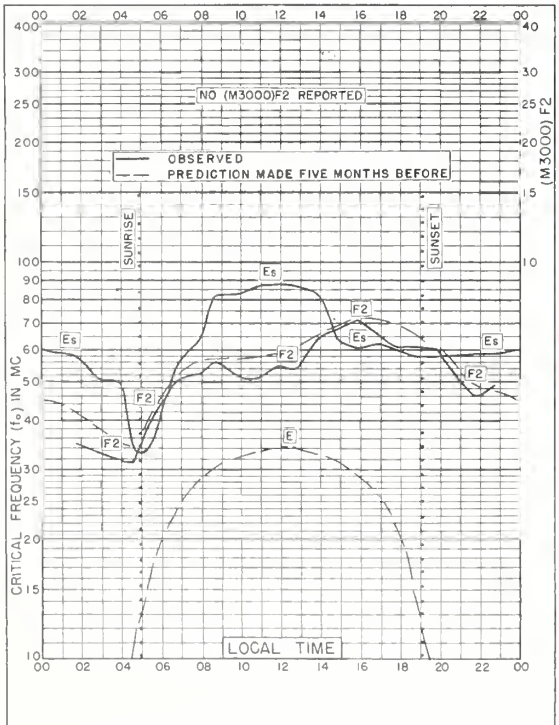


Fig. 63. YAMAGAWA, JAPAN
31.2°N, 130.6°E JUNE 1954

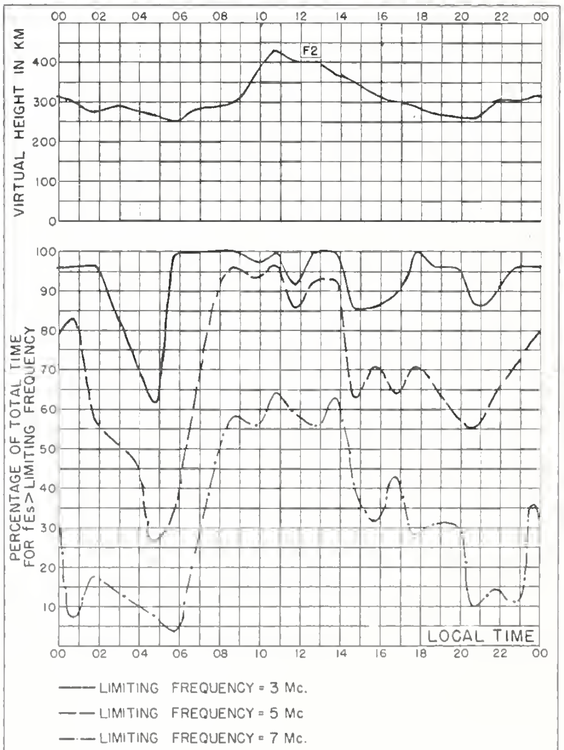


Fig. 64. YAMAGAWA, JAPAN JUNE 1954

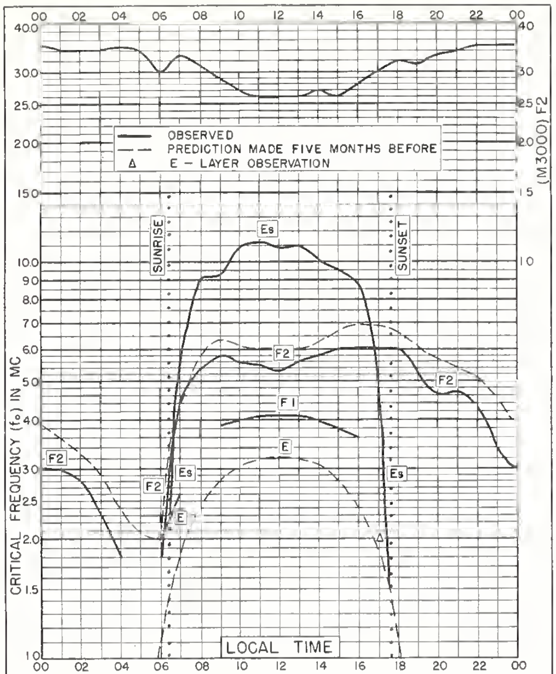


Fig. 65. HUANCAYO, PERU
12.0°S, 75.3° W JUNE 1954

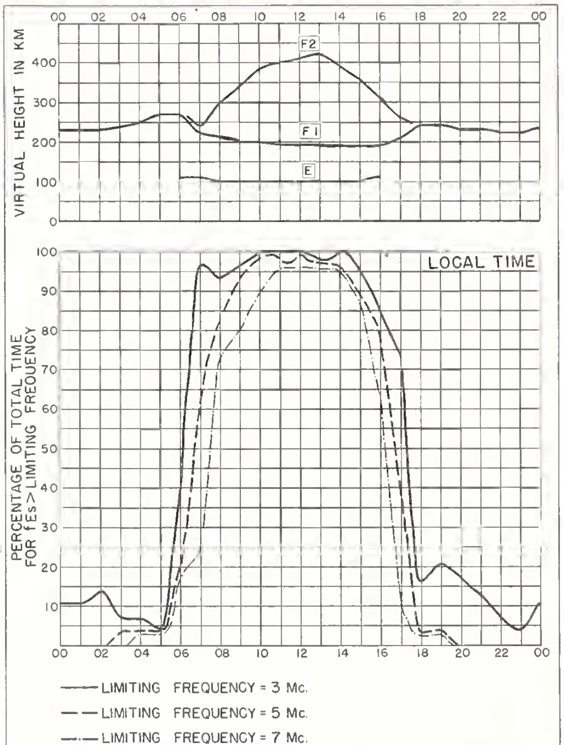


Fig. 66. HUANCAYO, PERU JUNE 1954

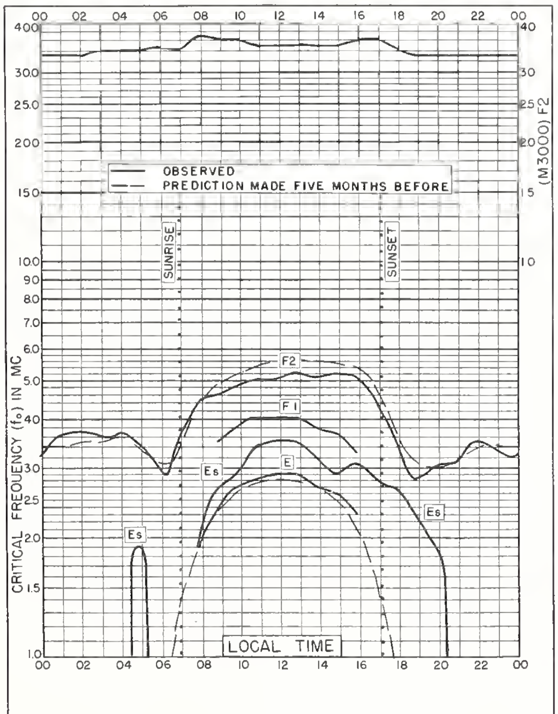


Fig. 67. WATHEROO, W. AUSTRALIA
30.3°S, 115.9°E JUNE 1954

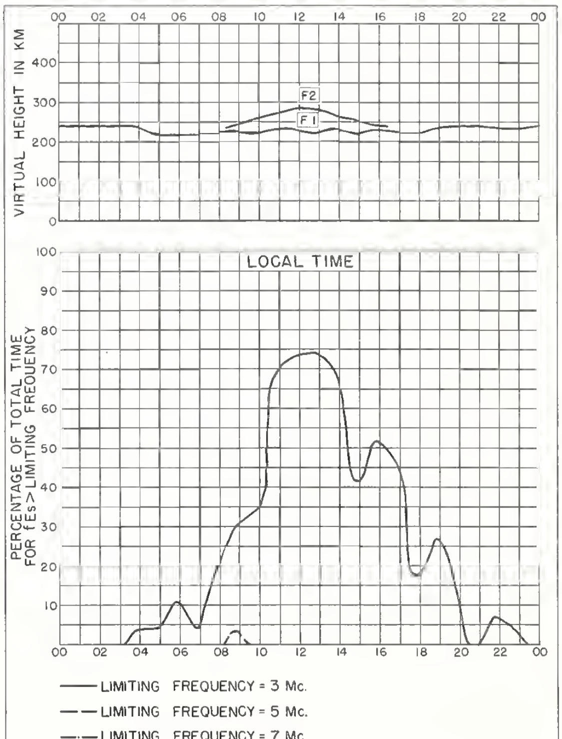


Fig. 68. WATHEROO, W. AUSTRALIA JUNE 1954

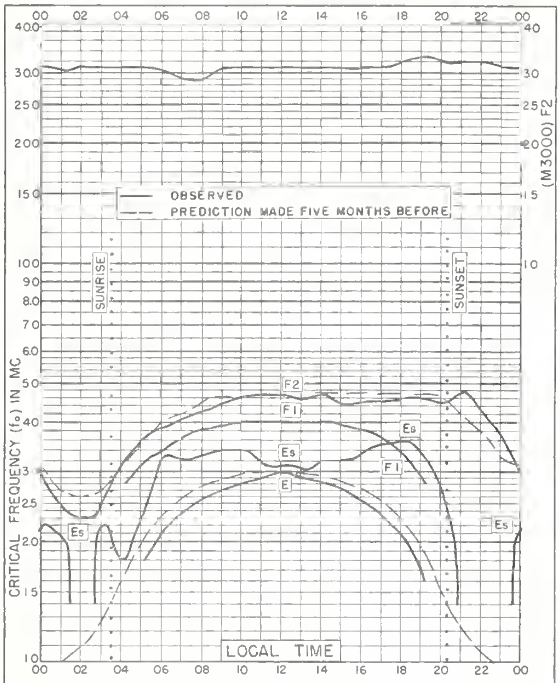


Fig. 69. UPSALA, SWEDEN
59.8°N, 17.6°E MAY 1954

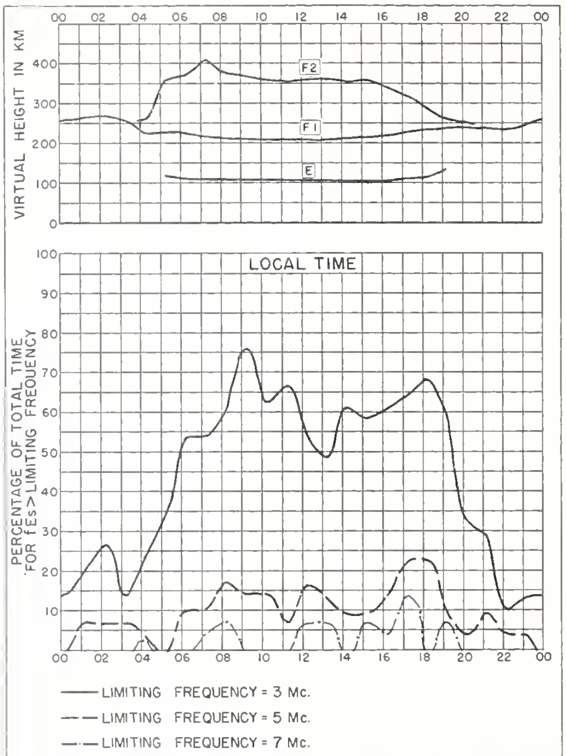


Fig. 70. UPSALA, SWEDEN MAY 1954

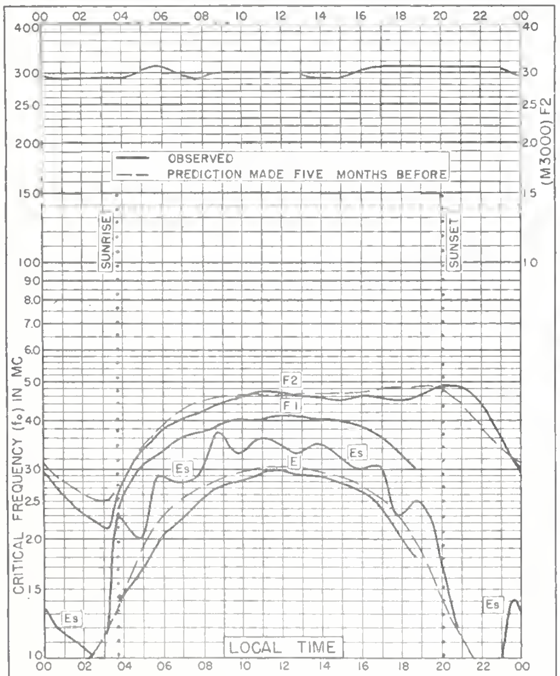


Fig. 71. INVERNESS, SCOTLAND
57.4°N, 4.2°W MAY 1954

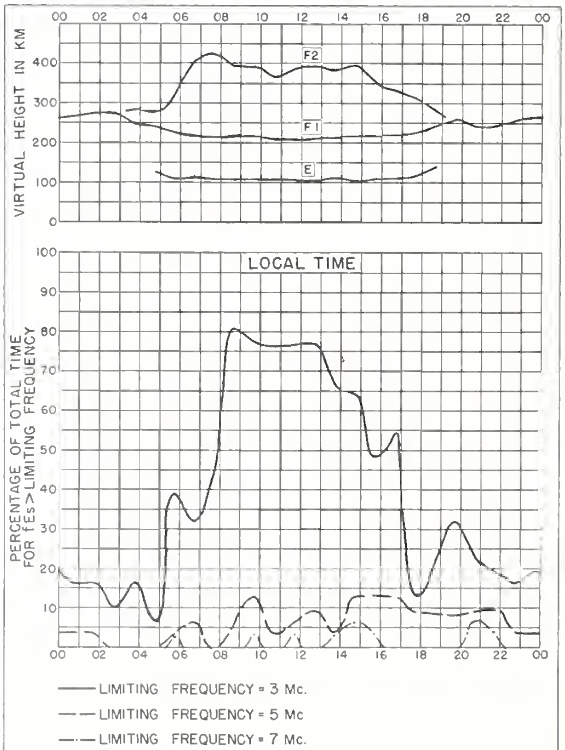


Fig. 72. INVERNESS, SCOTLAND MAY 1954

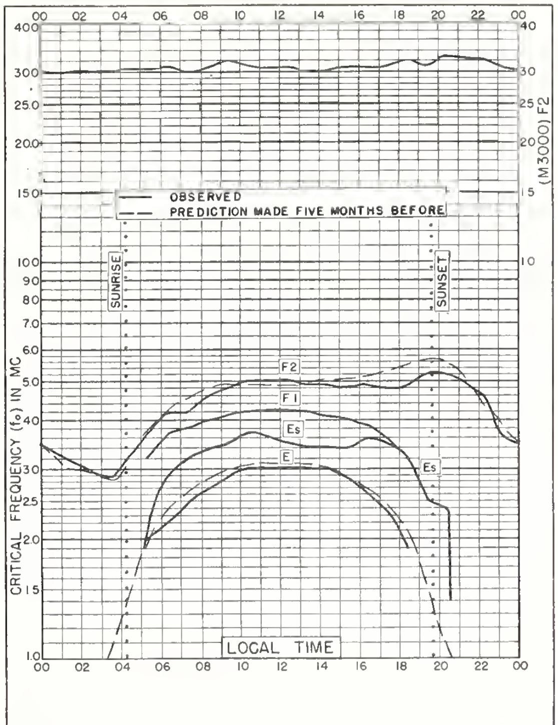


Fig. 73. De BILT, HOLLAND
52.1°N, 5.2°E MAY 1954

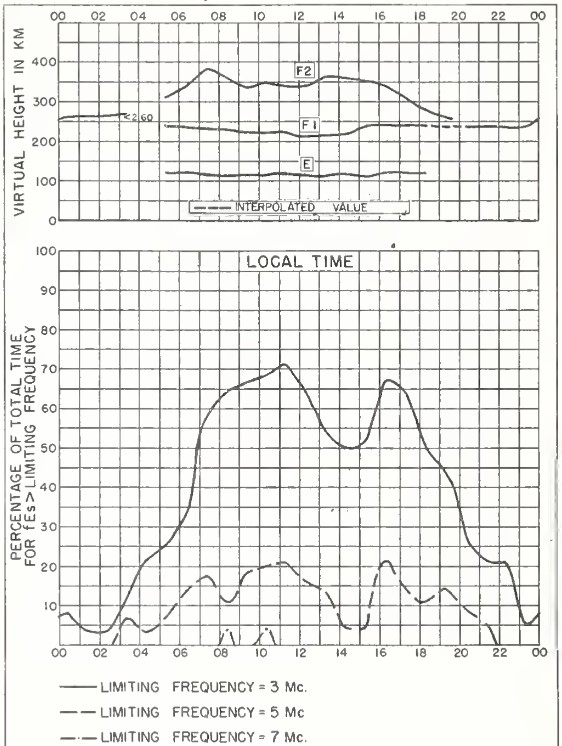


Fig. 74. De BILT, HOLLAND MAY 1954

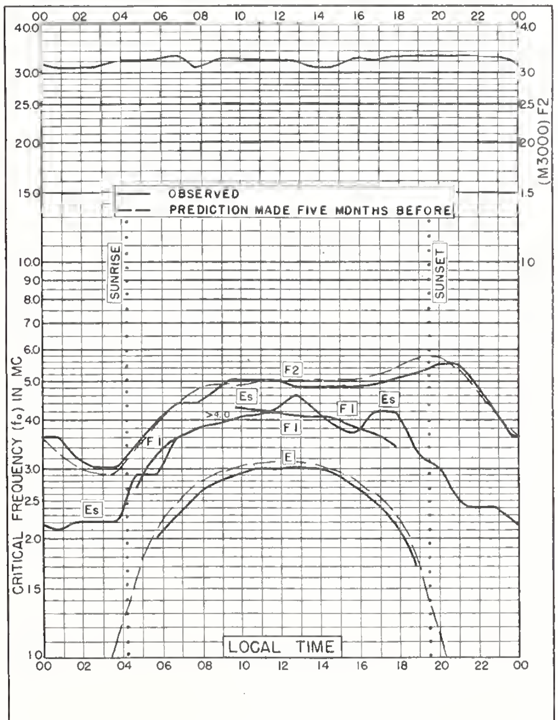


Fig. 75. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E MAY 1954

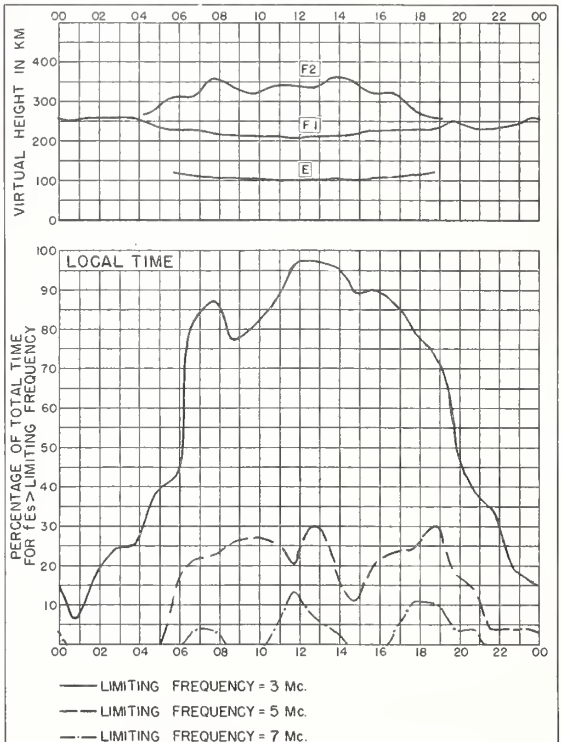


Fig. 76. LINDAU/HARZ, GERMANY MAY 1954

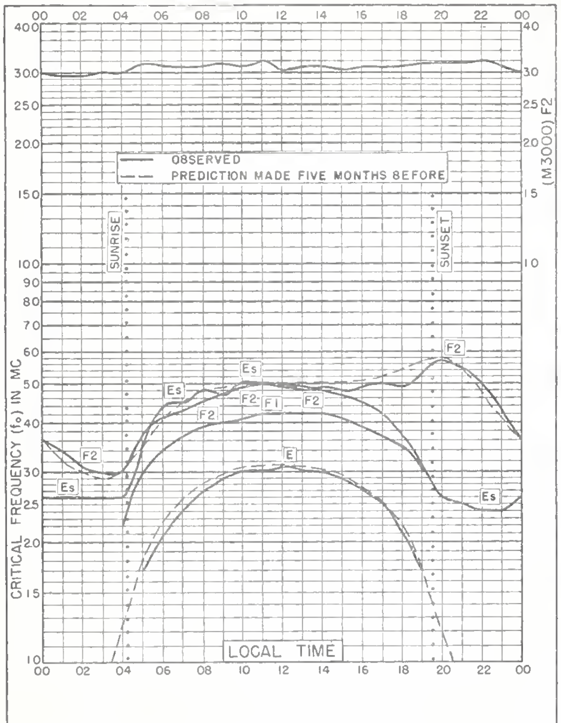


Fig. 77. SLOUGH, ENGLAND
51.5°N, 0.6°W MAY 1954

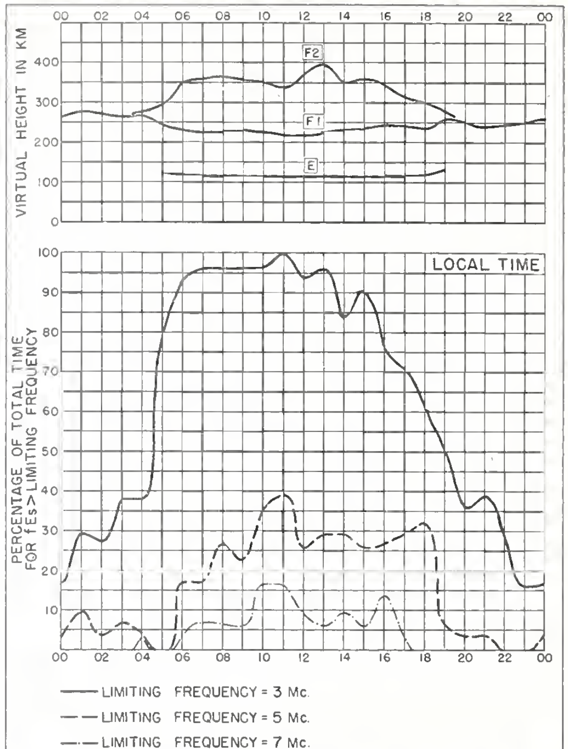


Fig. 78. SLOUGH, ENGLAND MAY 1954

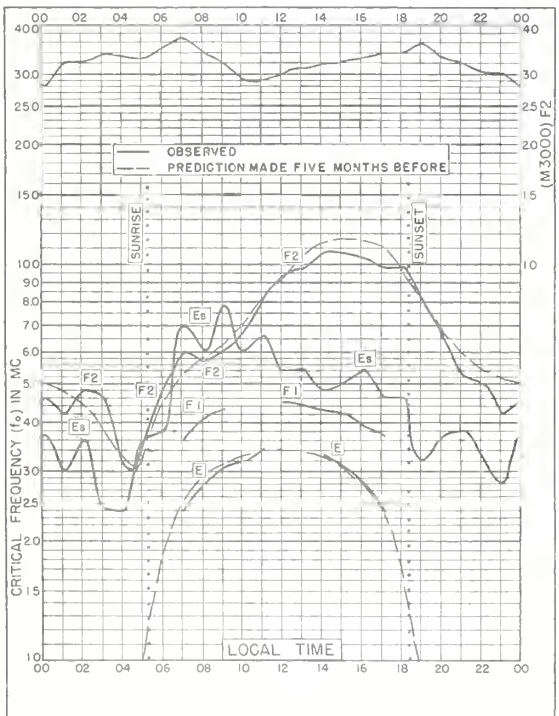


Fig. 79. FORMOSA, CHINA
25.0°N, 121.5°E MAY 1954

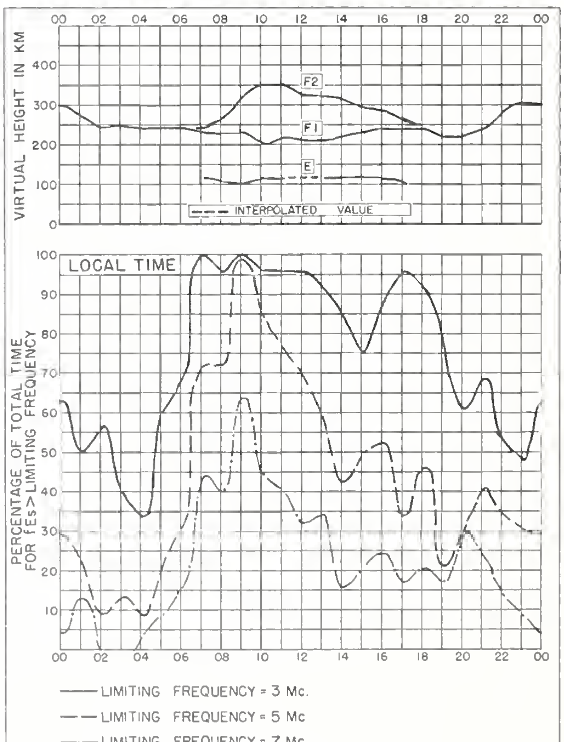


Fig. 80. FORMOSA, CHINA MAY 1954

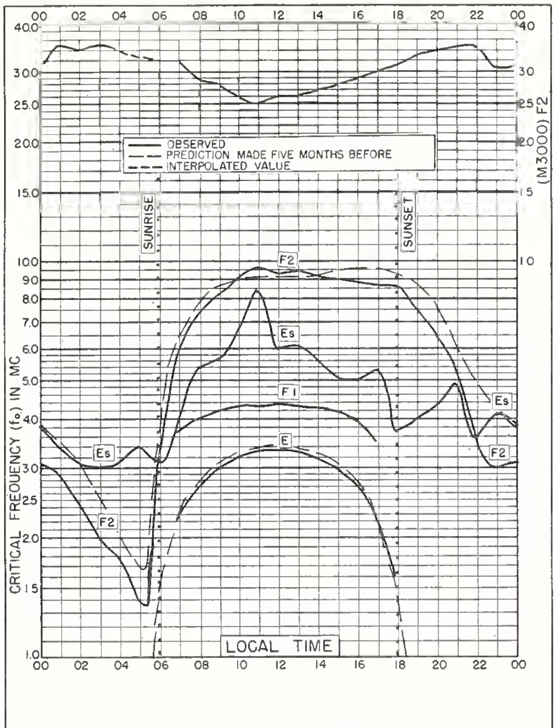
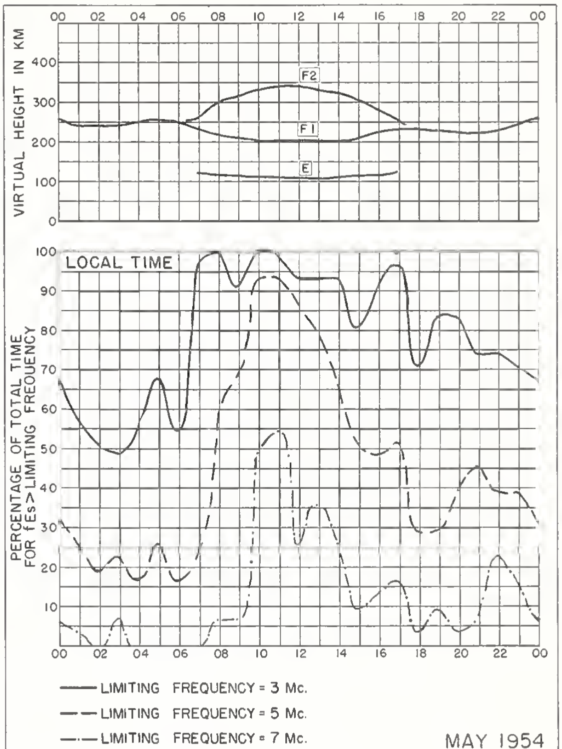


Fig. 81. SINGAPORE, BRITISH MALAYA
1.3°N, 103.8°E MAY 1954



MAY 1954
Fig. 82. SINGAPORE, BRITISH MALAYA

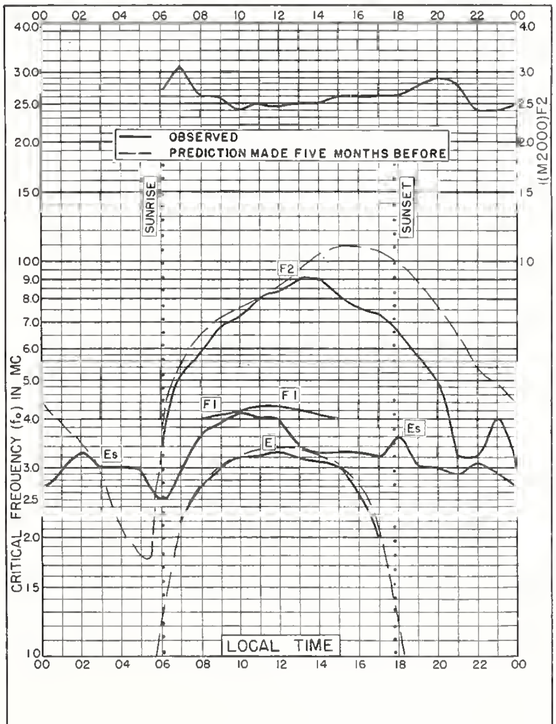
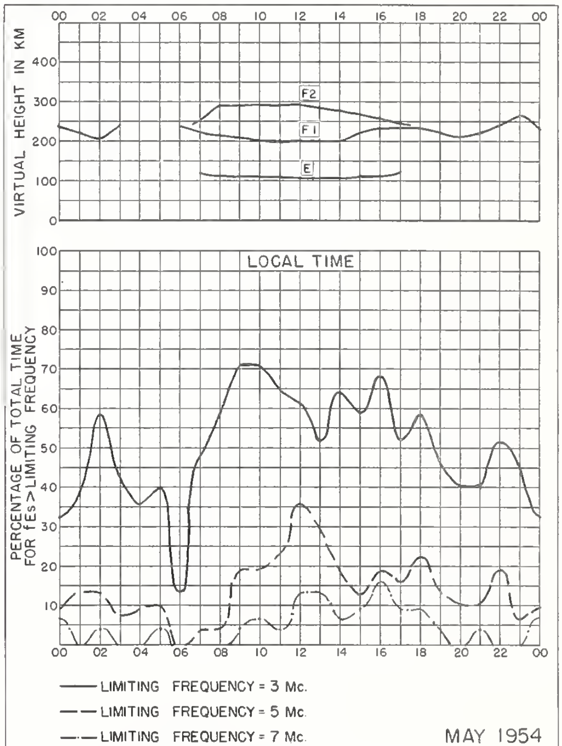


Fig. 83. LEOPOLDVILLE, BELGIAN CONGO
4.3°S, 15.3°E MAY 1954



MAY 1954
Fig. 84. LEOPOLDVILLE, BELGIAN CONGO

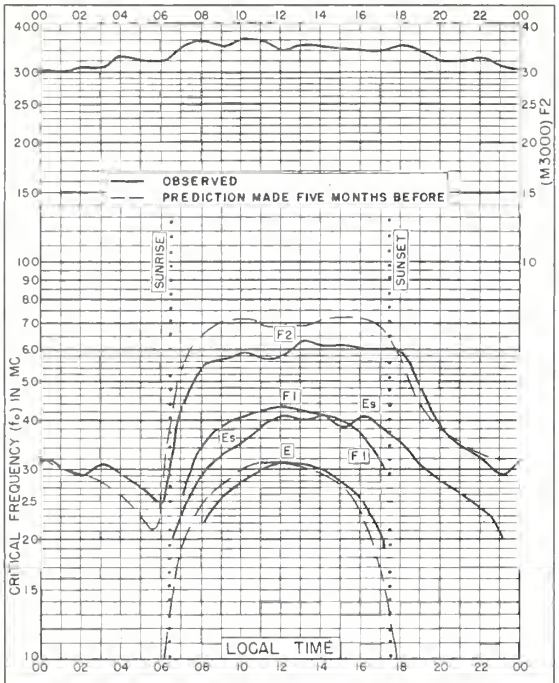


Fig. 85. RAROTONGA I.
21.3°S, 159.8°W MAY 1954

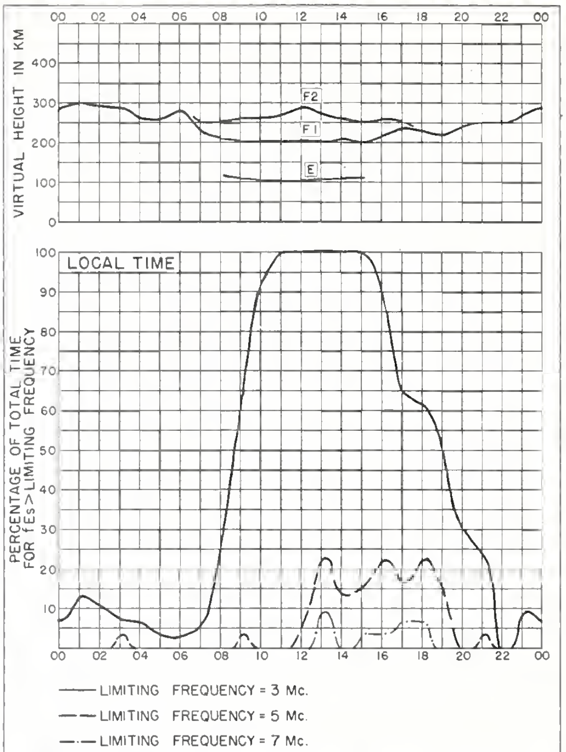


Fig. 86. RAROTONGA I. MAY 1954

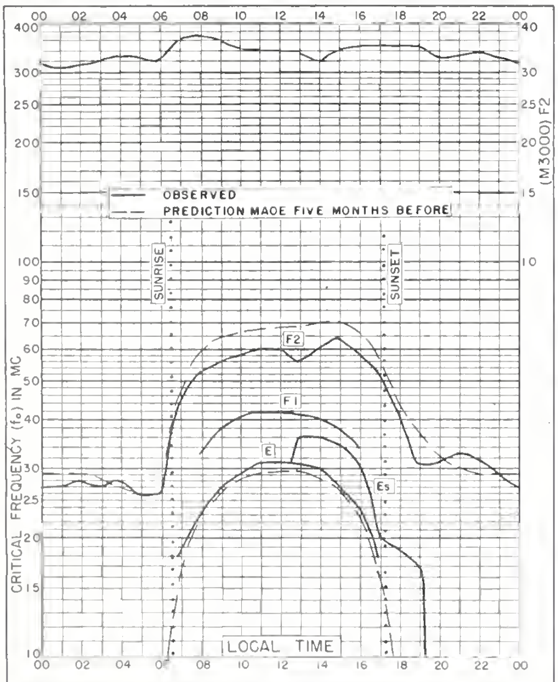
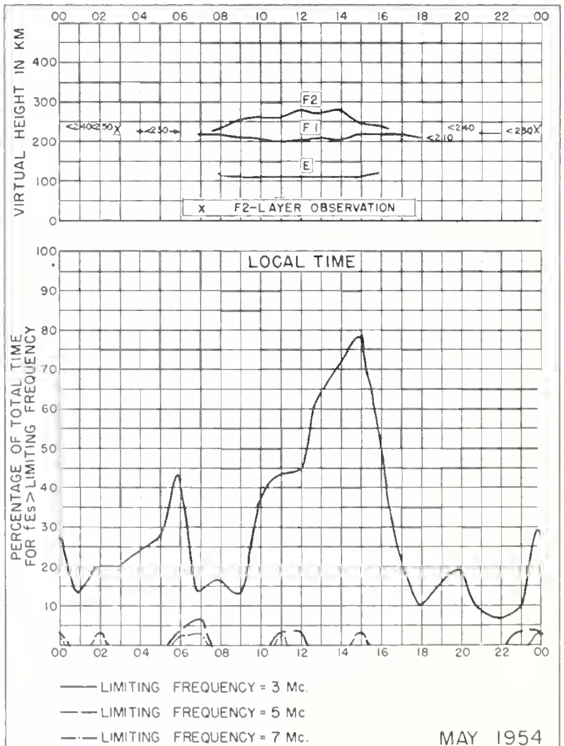


Fig. 87. JOHANNESBURG, UNION OF S. AFRICA
26.2°S, 28.1°E MAY 1954



MAY 1954
Fig. 88. JOHANNESBURG, UNION OF S. AFRICA

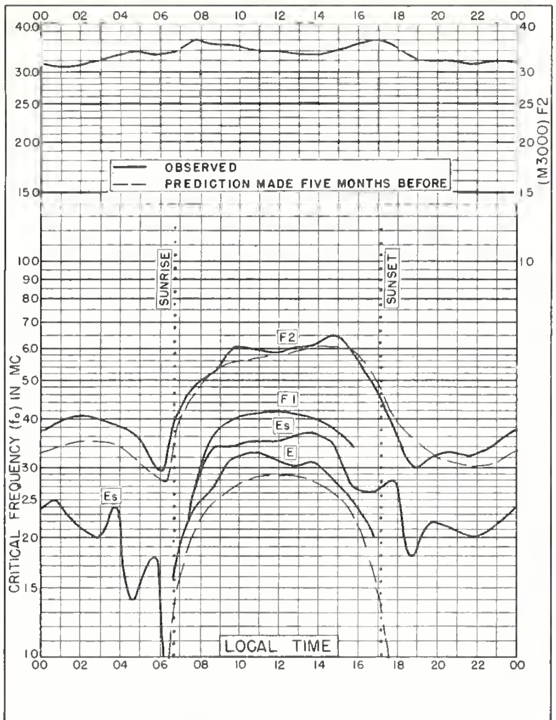


Fig. 89. WATHEROO, W. AUSTRALIA
30.3°S, 115.9°E MAY 1954

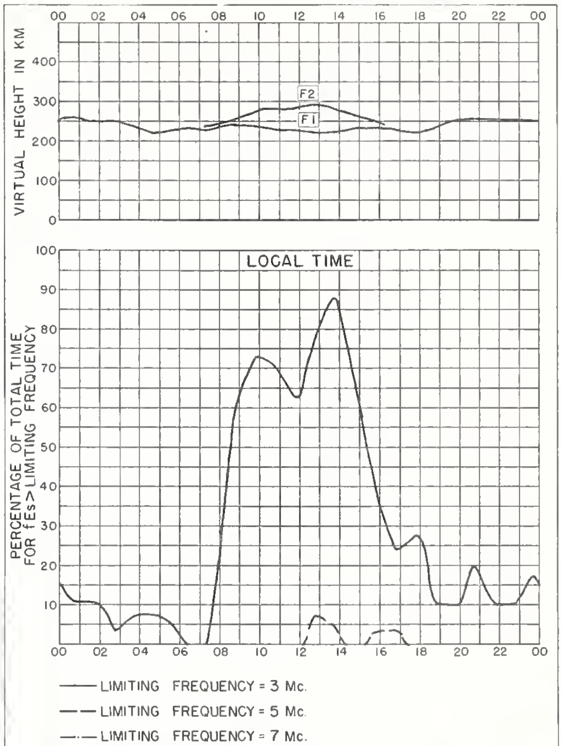


Fig. 90. WATHEROO, W. AUSTRALIA MAY 1954

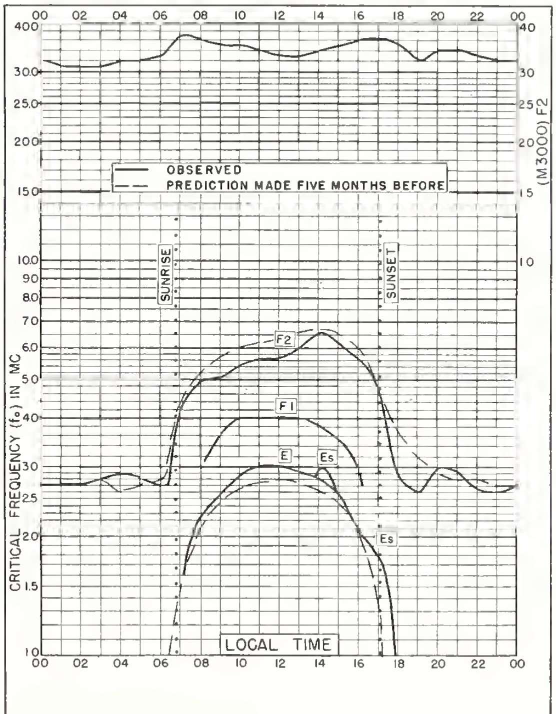
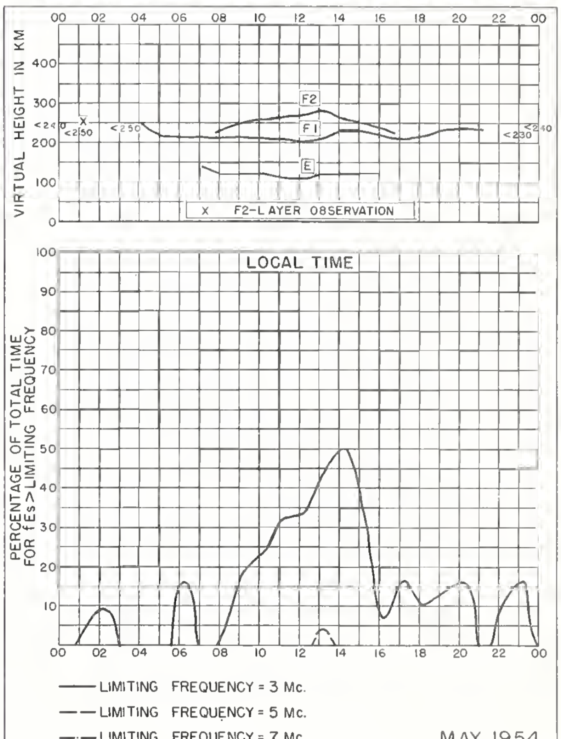


Fig. 91. CAPETOWN, UNION OF S. AFRICA
34. 2°S, 18.3°E MAY 1954



MAY 1954

Fig. 92. CAPETOWN, UNION OF S. AFRICA

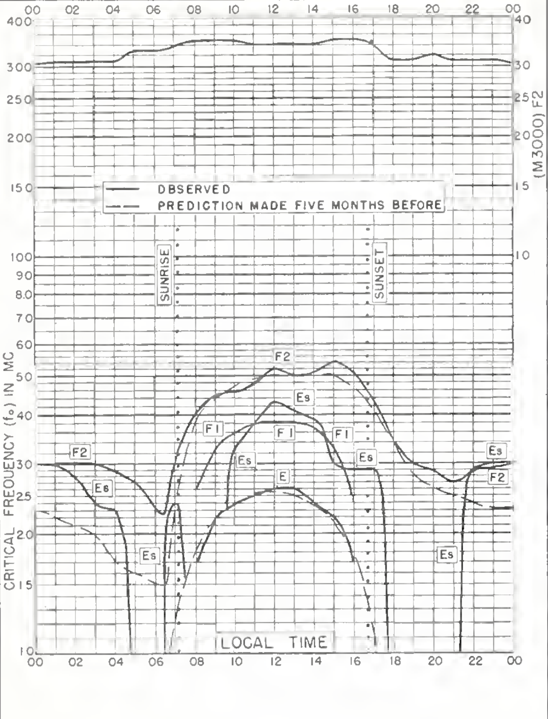


Fig. 93. CHRISTCHURCH, NEW ZEALAND
43.6°S, 172.8°E MAY 1954

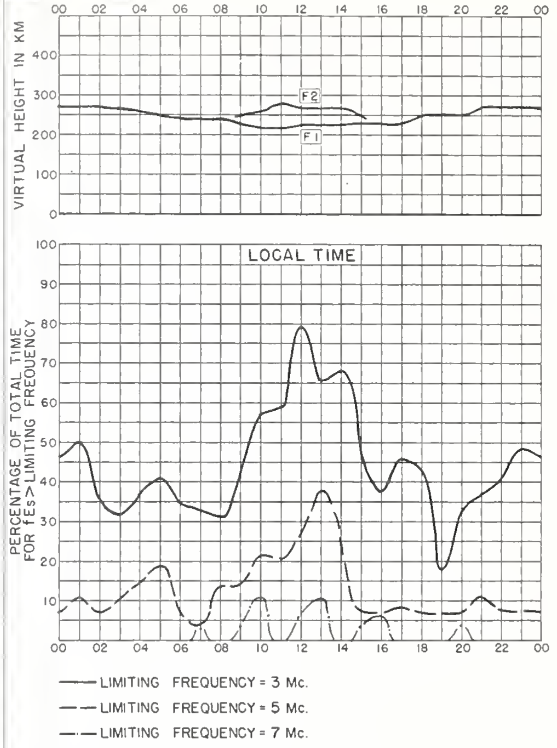


Fig. 94. CHRISTCHURCH, NEW ZEALAND MAY 1954

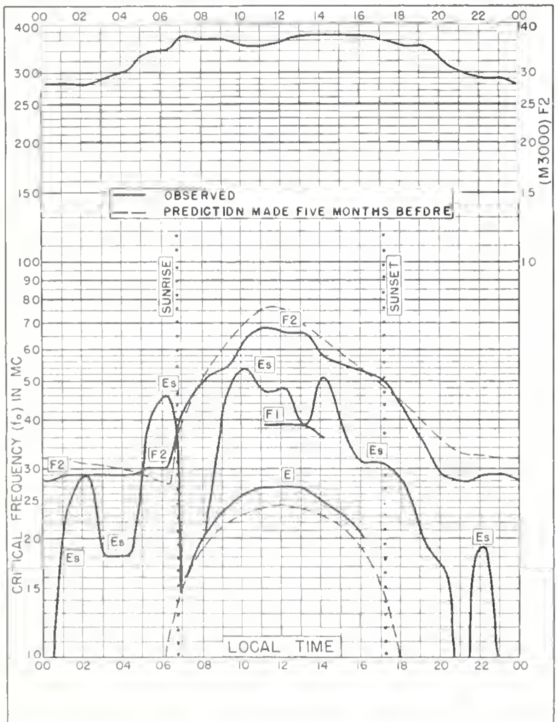


Fig. 95. FALKLAND IS.
51.7°S, 57.8°W APRIL 1954

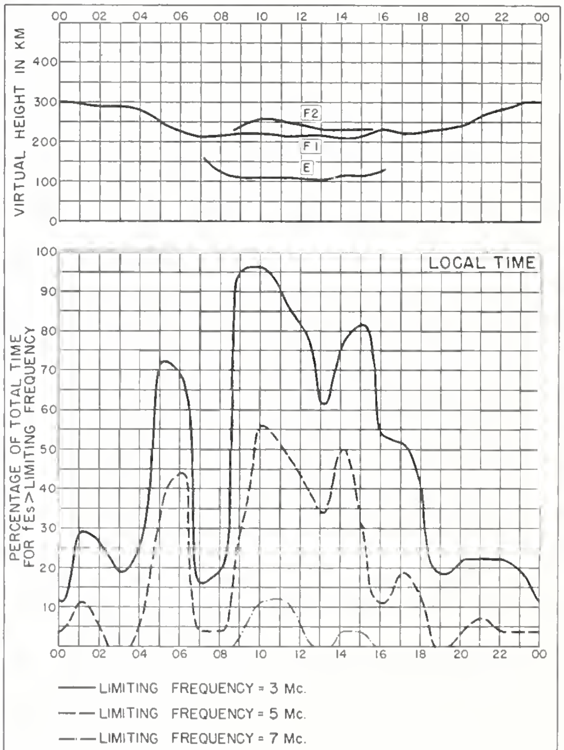


Fig. 96. FALKLAND IS. APRIL 1954

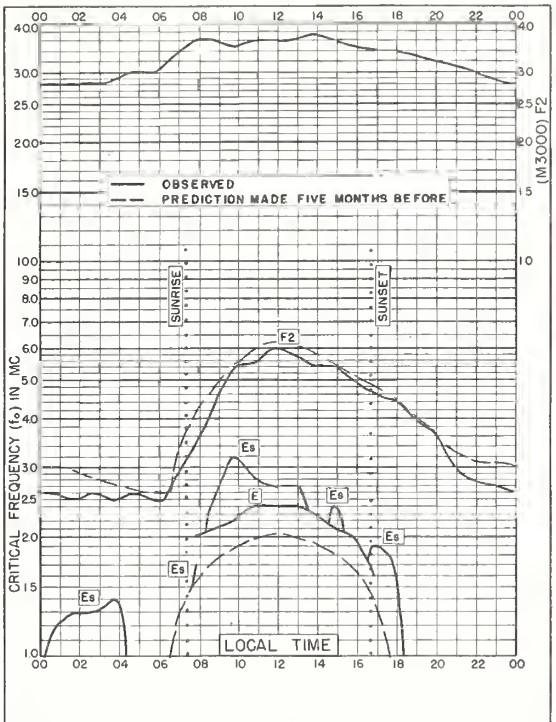


Fig. 97. PORT LOCKROY
64.8°S, 63.5°W APRIL 1954

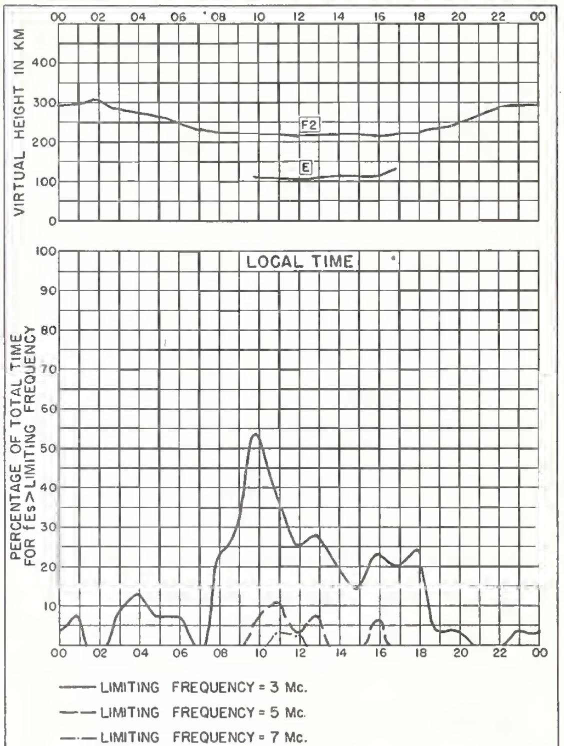


Fig. 98. PORT LOCKROY APRIL 1954

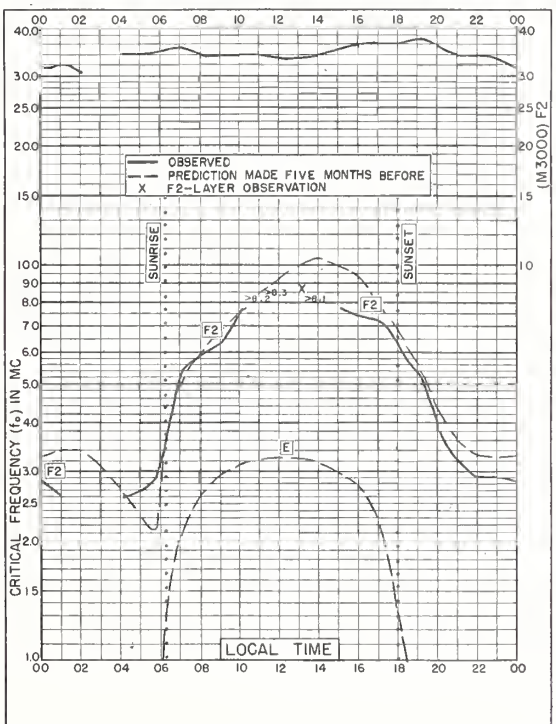


Fig. 99. DELHI, INDIA
28.6°N, 77.1°E MARCH 1954

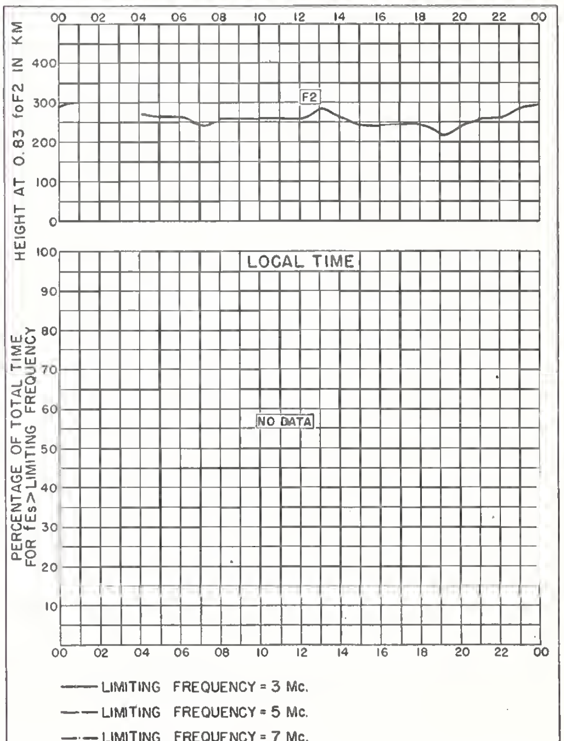


Fig. 100. DELHI, INDIA MARCH 1954

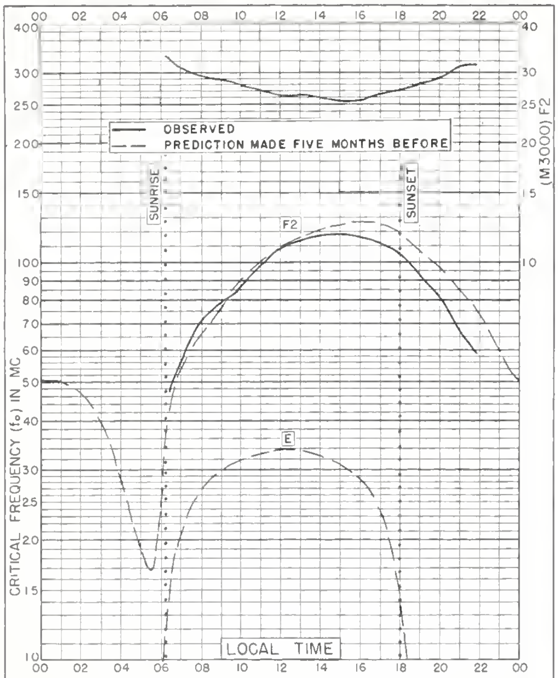


Fig. 101. BOMBAY, INDIA
19.0°N, 73.0°E MARCH 1954

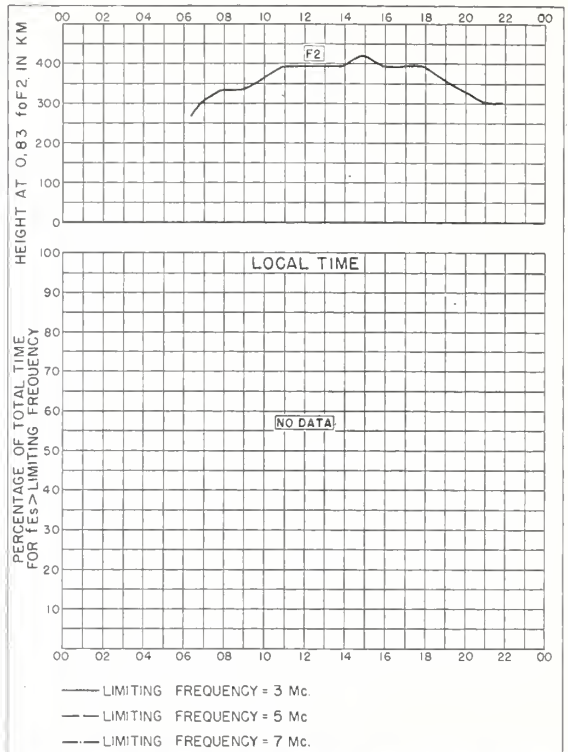


Fig. 102. BOMBAY, INDIA MARCH 1954

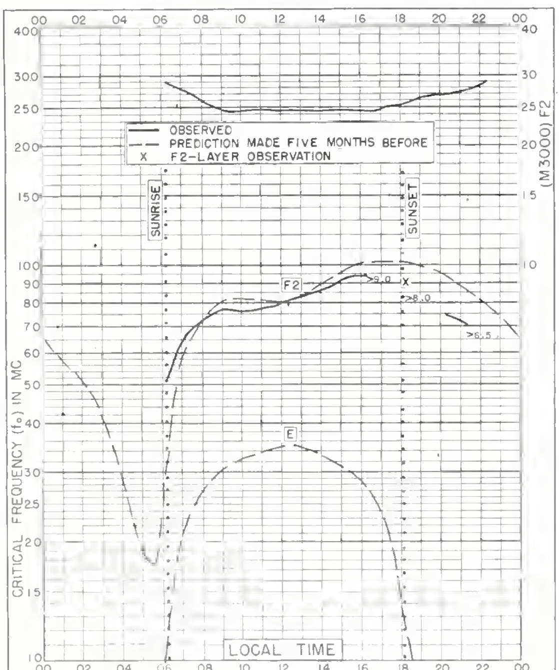


Fig. 103. MADRAS, INDIA
13.0°N, 80.2°E MARCH 1954

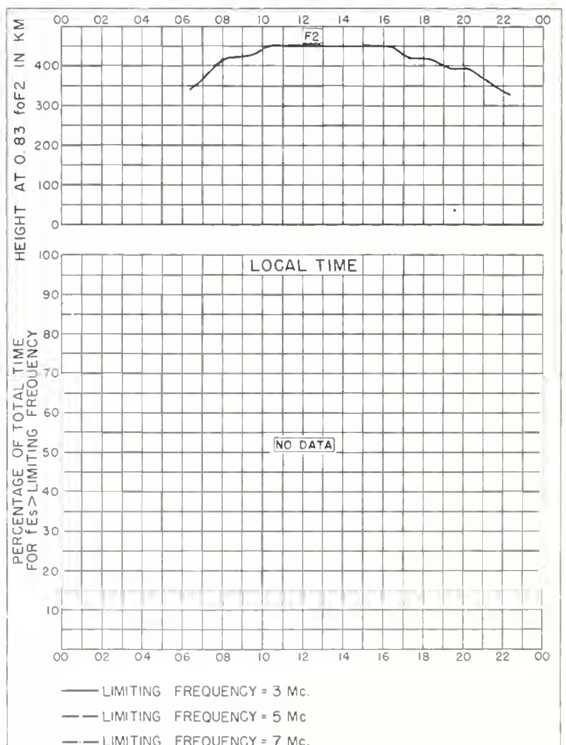


Fig. 104. MADRAS, INDIA MARCH 1954

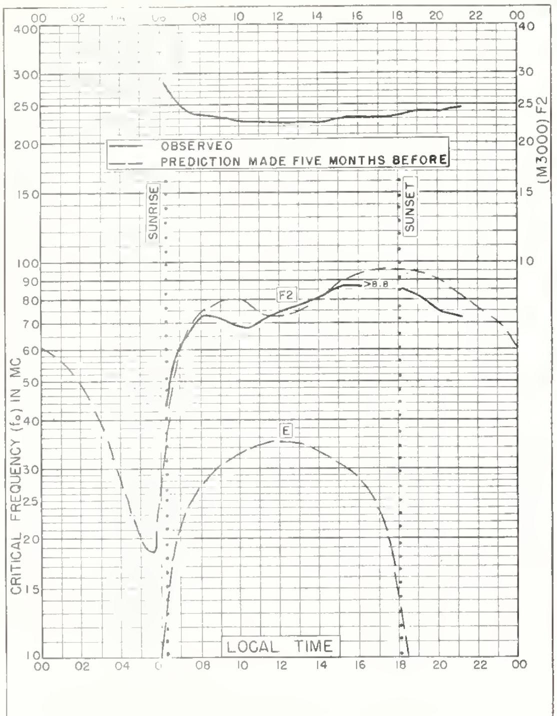


Fig. 105. TIRUCHY, INDIA
10.8°N, 78.8°E MARCH 1954

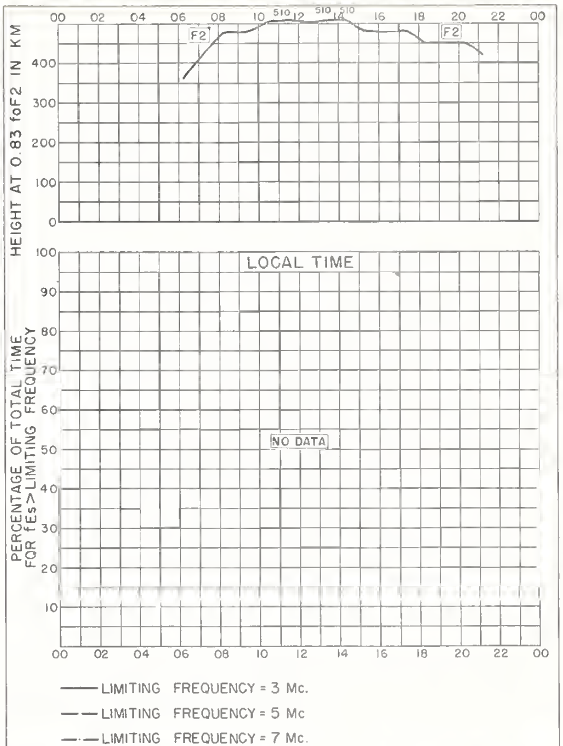


Fig. 106. TIRUCHY, INDIA MARCH 1954

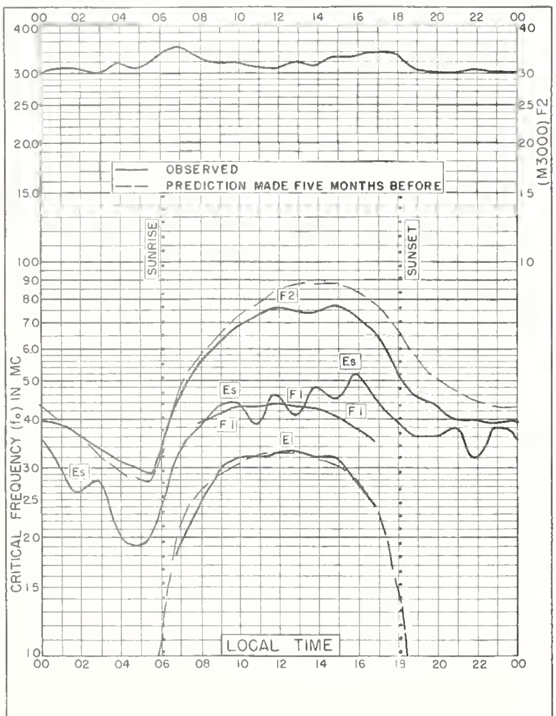


Fig. 107. TOWNSVILLE, AUSTRALIA
19.3°S, 146.7°E MARCH 1954

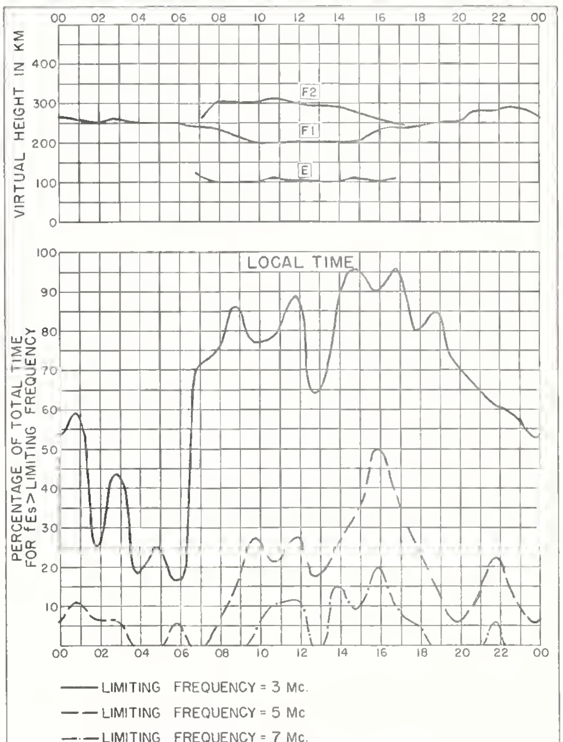


Fig. 108. TOWNSVILLE, AUSTRALIA MARCH 1954

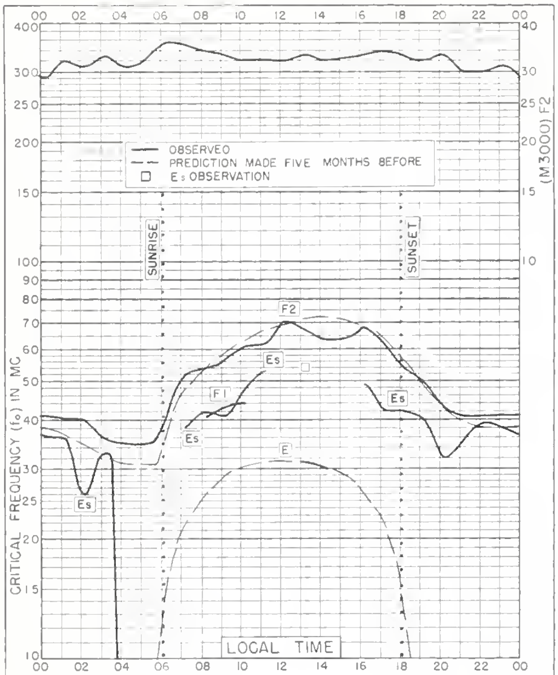


Fig. 109. BRISBANE, AUSTRALIA
27.5°S, 153.0°E MARCH 1954

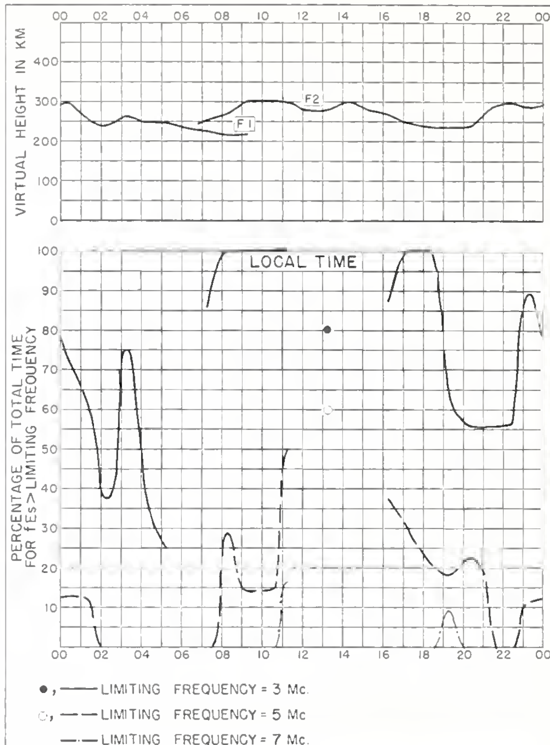


Fig. 110. BRISBANE, AUSTRALIA MARCH 1954

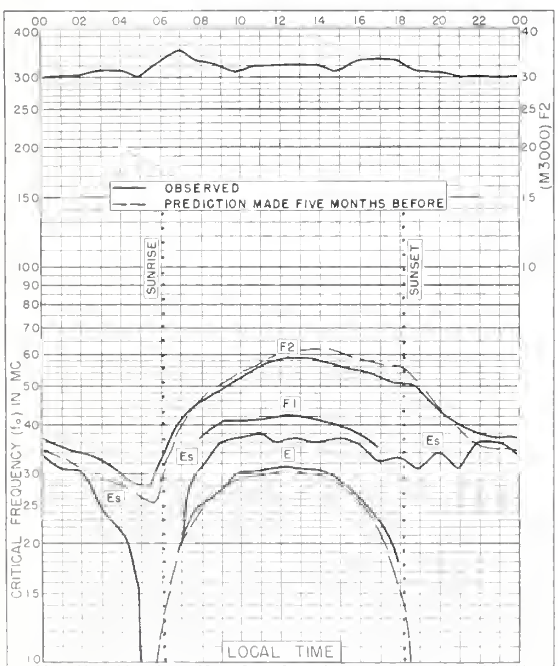


Fig. 111. CANBERRA, AUSTRALIA
35.3°S, 149.0°E MARCH 1954

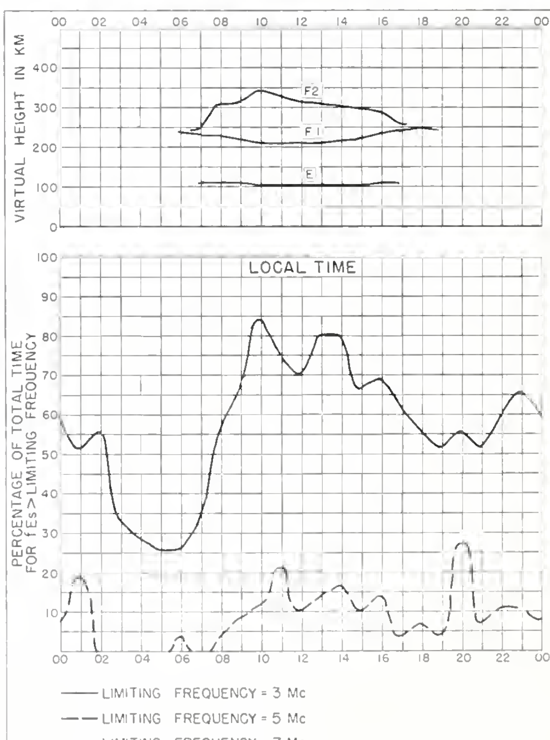


Fig. 112. CANBERRA, AUSTRALIA MARCH 1954

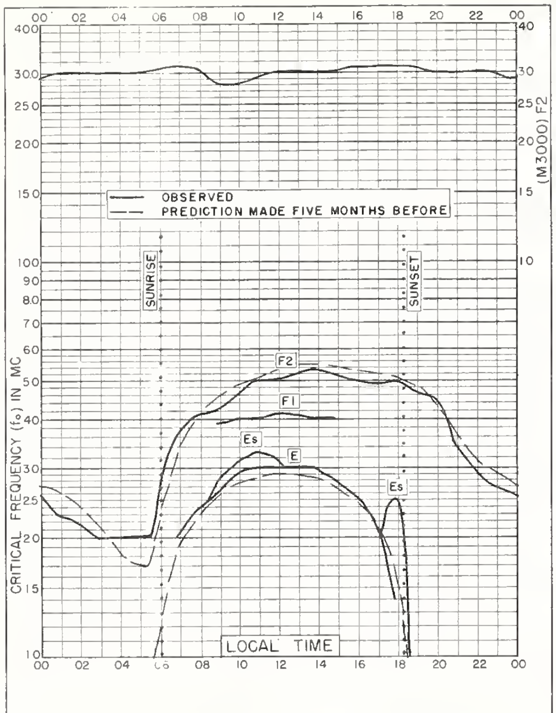


Fig. 113. HOBART, TASMANIA
42.9°S, 147.3°E MARCH 1954

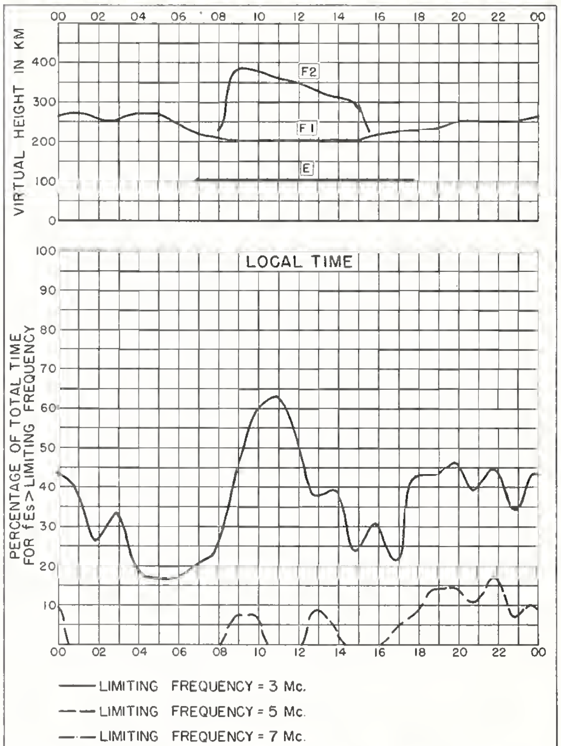


Fig. 114. HOBART, TASMANIA MARCH 1954

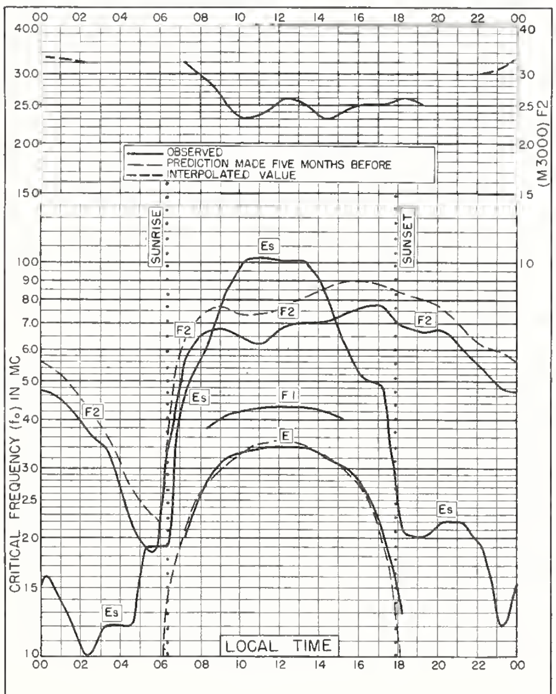


Fig. 115. IBADAN, NIGERIA
7.4°N, 4.0°E JANUARY 1954

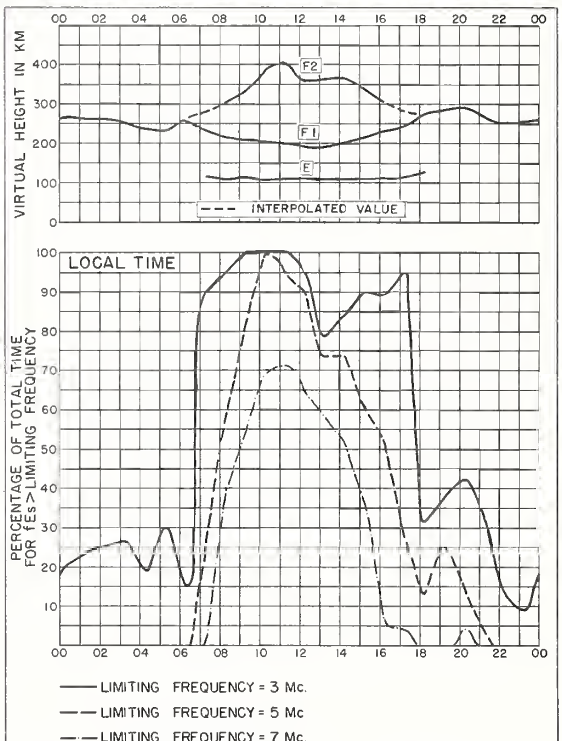


Fig. 116. IBADAN, NIGERIA JANUARY 1954

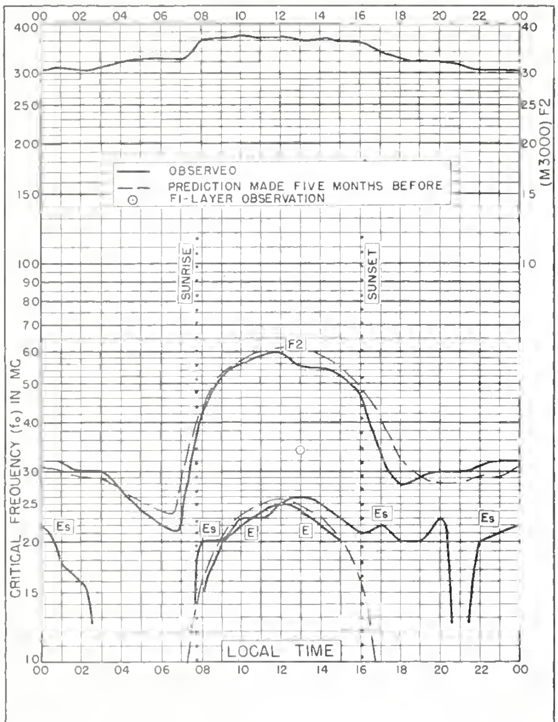


Fig. 117. FRIBOURG, GERMANY
48.1°N, 7.8°E DECEMBER 1953

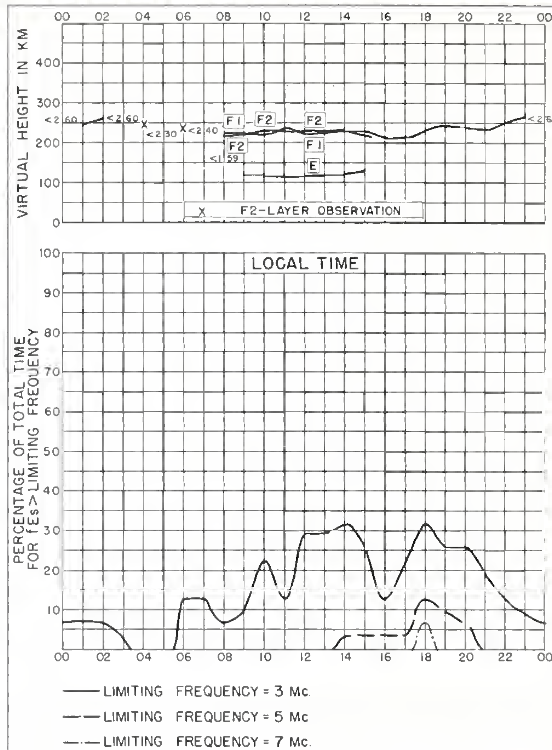


Fig. 118. FRIBOURG, GERMANY DECEMBER 1953

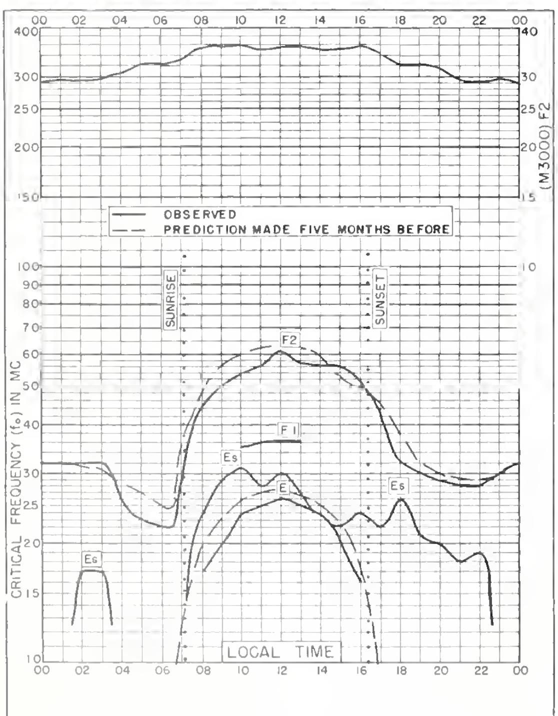


Fig. 119. FRIBOURG, GERMANY
48.1°N, 7.8°E NOVEMBER 1953

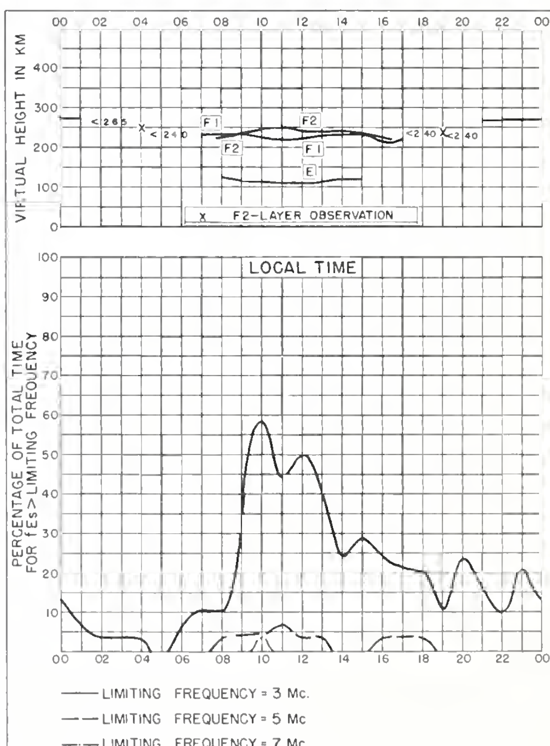


Fig. 120. FRIBOURG, GERMANY NOVEMBER 1953

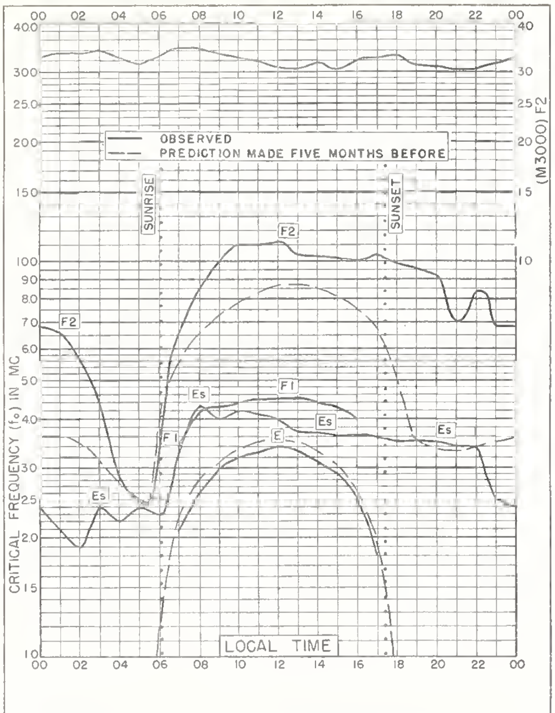
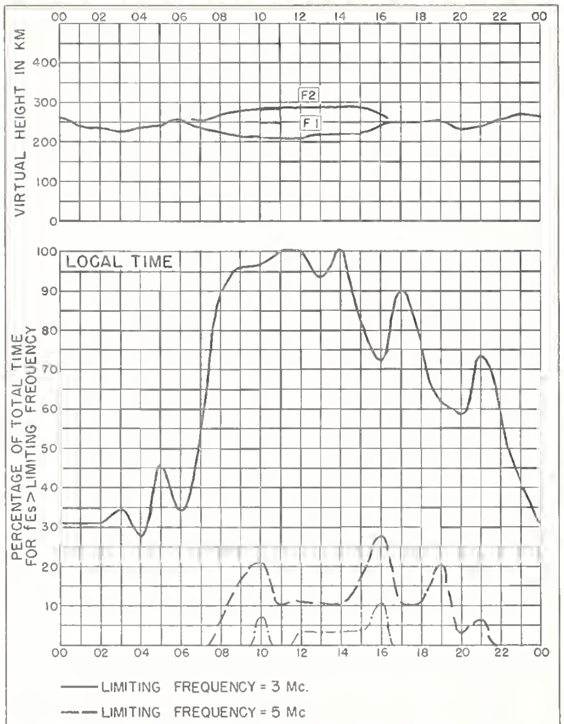


Fig. 121. DAKAR, FRENCH W. AFRICA
14.6°N, 17.4°W NOVEMBER 1953



NOVEMBER 1953
Fig. 122. DAKAR, FRENCH W. AFRICA

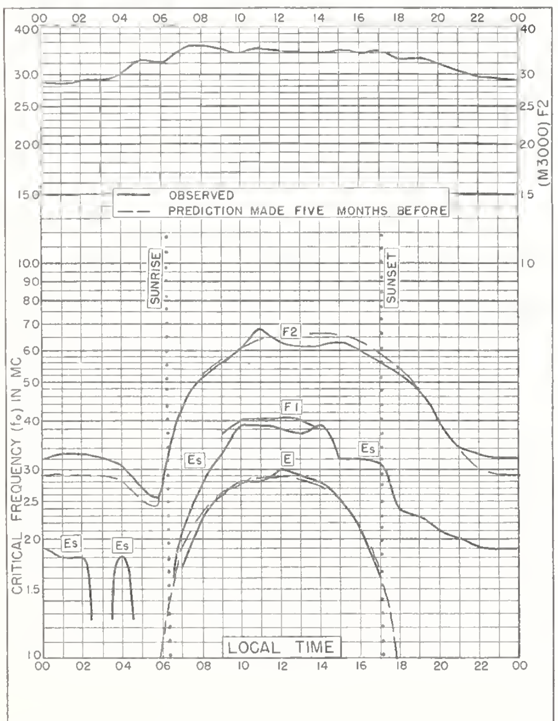


Fig. 123. FRIBOURG, GERMANY
48.1°N, 7.8°E OCTOBER 1953

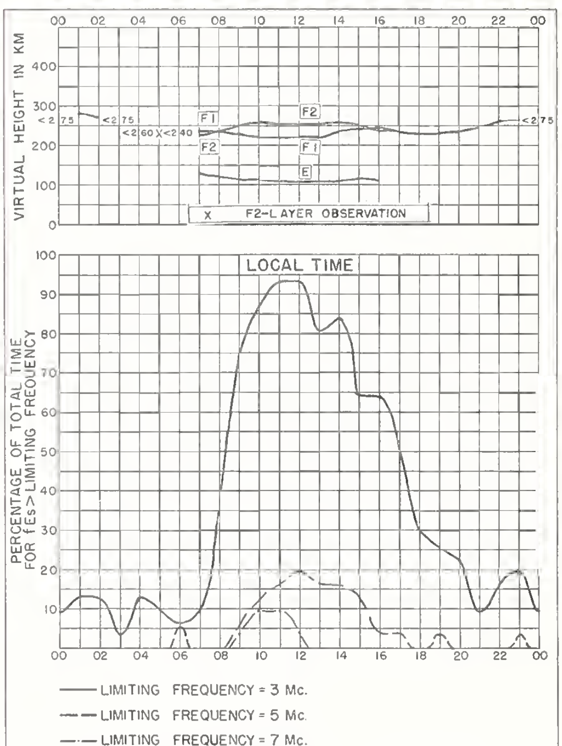


Fig. 124. FRIBOURG, GERMANY OCTOBER 1953

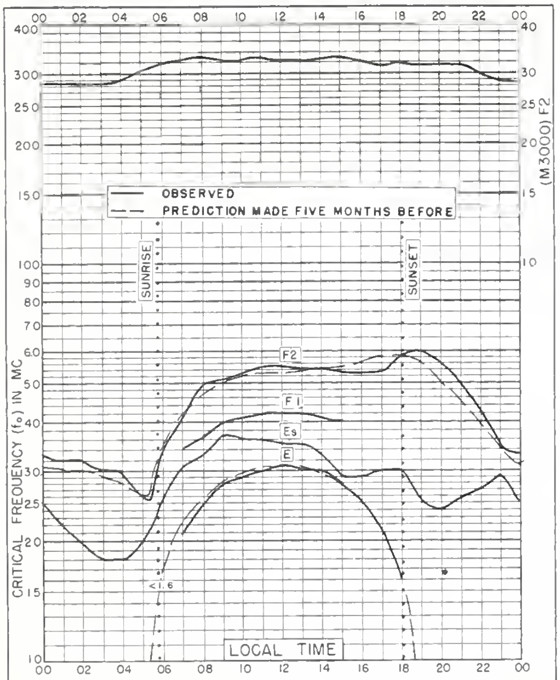


Fig. 125. FRIBOURG, GERMANY
48.1°N, 7.8°E SEPTEMBER 1953

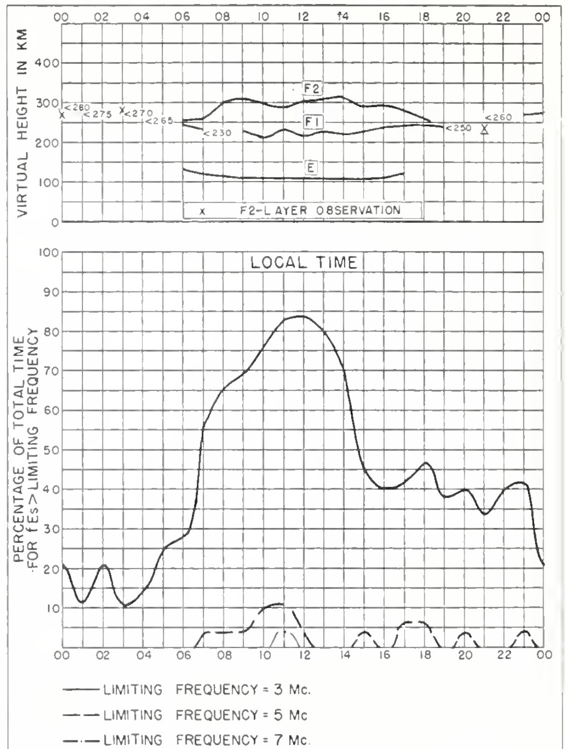


Fig. 126. FRIBOURG, GERMANY SEPTEMBER 1953

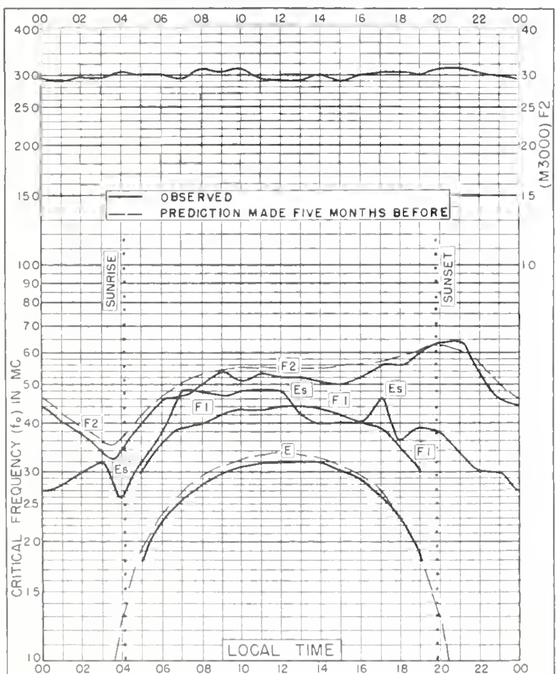


Fig. 127. FRIBOURG, GERMANY
48.1°N, 7.8°E JUNE 1953

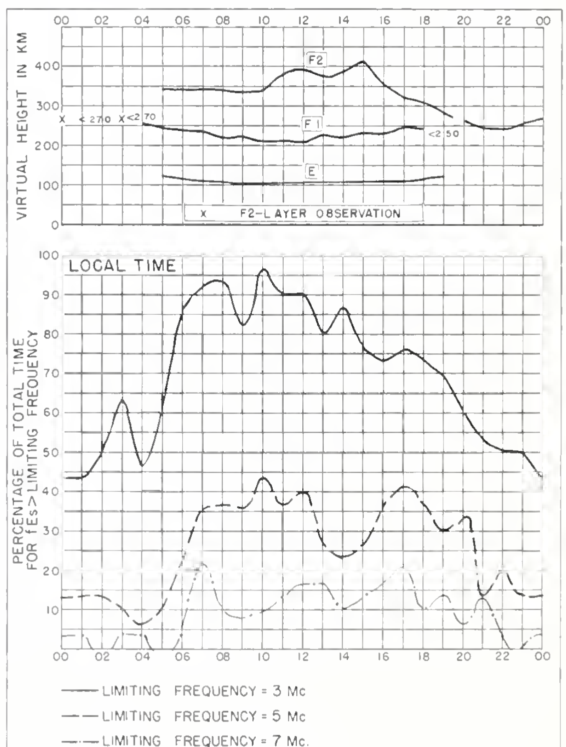


Fig. 128. FRIBOURG, GERMANY JUNE 1953

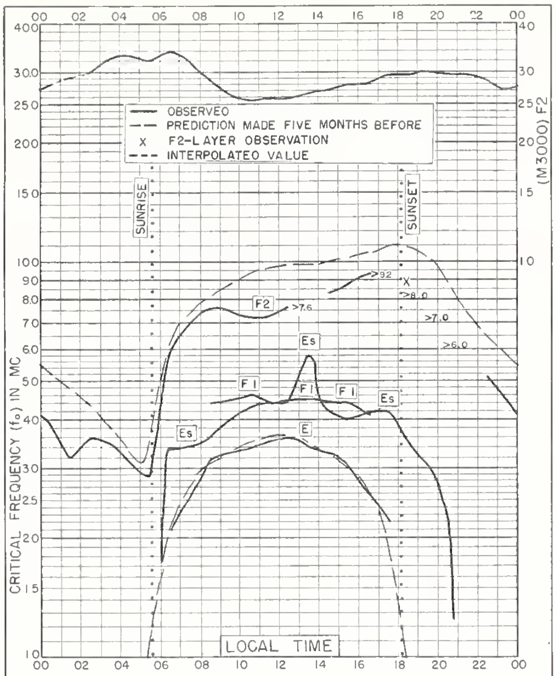
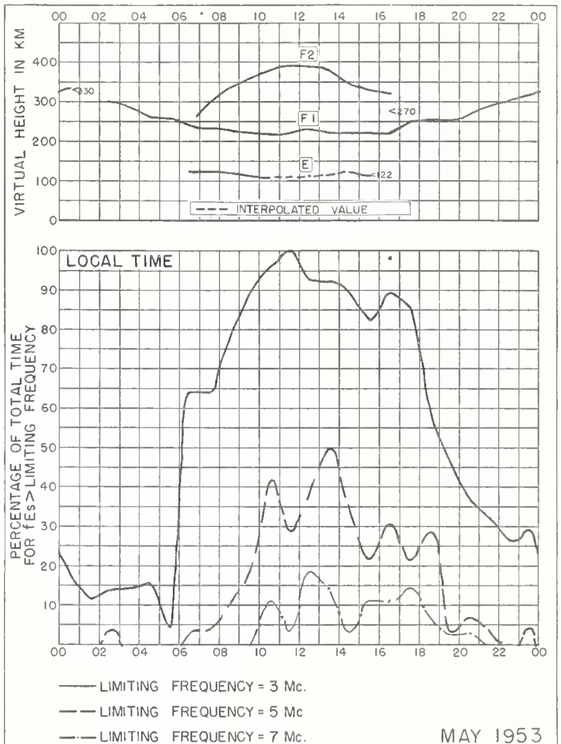


Fig. 129. DJIBOUTI, FRENCH SOMALILAND
11.5°N, 43.1°E MAY 1953



MAY 1953
Fig. 130. DJIBOUTI, FRENCH SOMALILAND

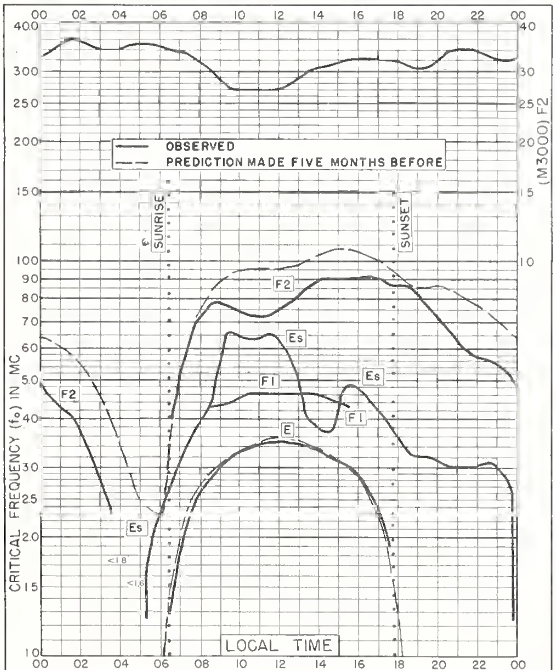
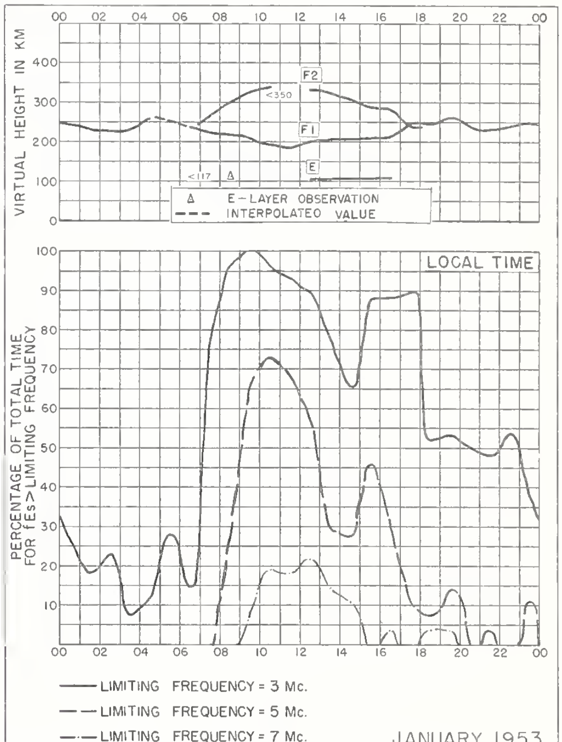


Fig. 131. DJIBOUTI, FRENCH SOMALILAND
11.5°N, 43.1°E JANUARY 1953



JANUARY 1953
Fig. 132. DJIBOUTI, FRENCH SOMALILAND

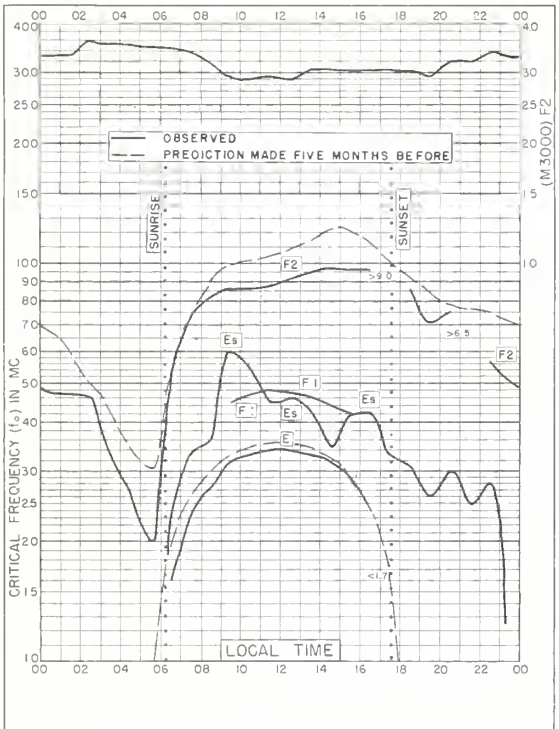


Fig. 133. DJIBOUTI, FRENCH SOMALILAND
11.5°N, 43.1°E DECEMBER 1952

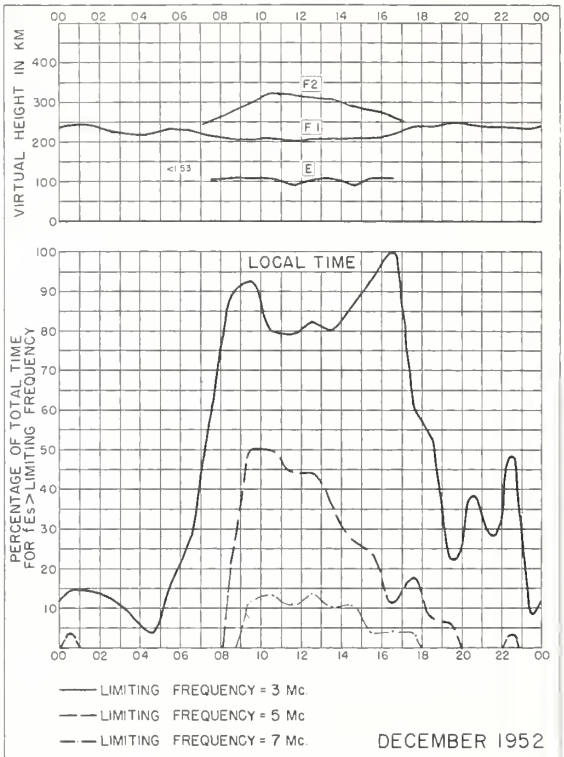


Fig. 134. DJIBOUTI, FRENCH SOMALILAND
DECEMBER 1952

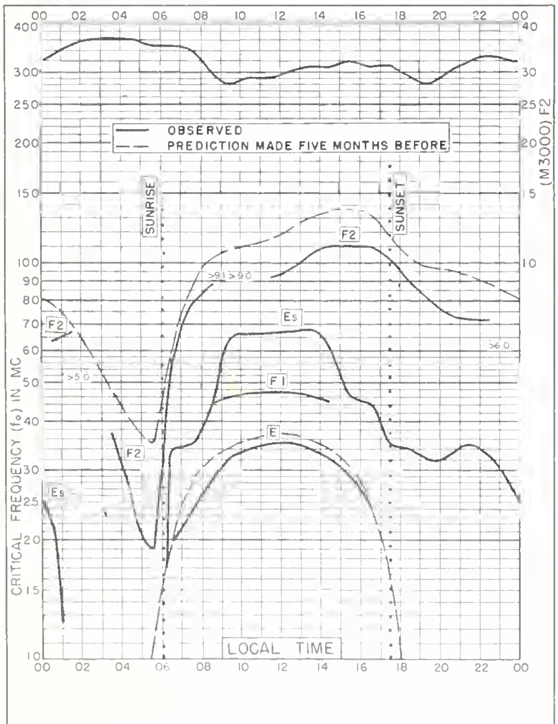


Fig. 135. DJIBOUTI, FRENCH SOMALILAND
11.5°N, 43.1°E NOVEMBER 1952

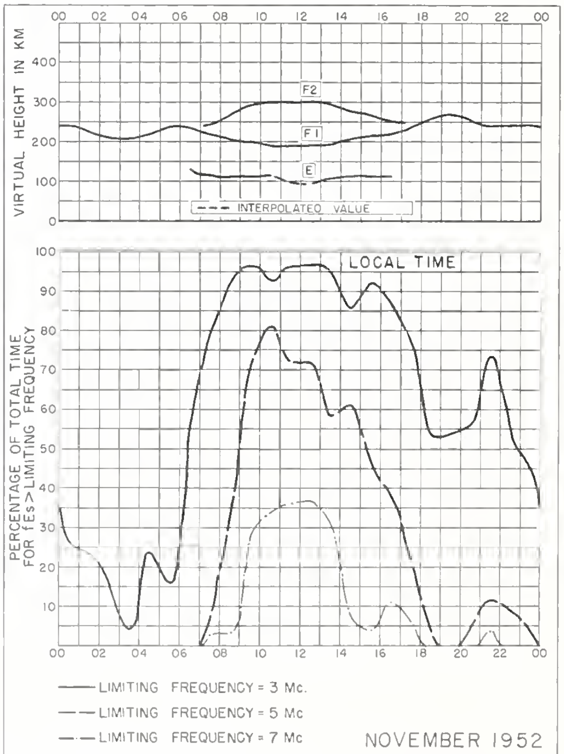


Fig. 136. DJIBOUTI, FRENCH SOMALILAND
NOVEMBER 1952

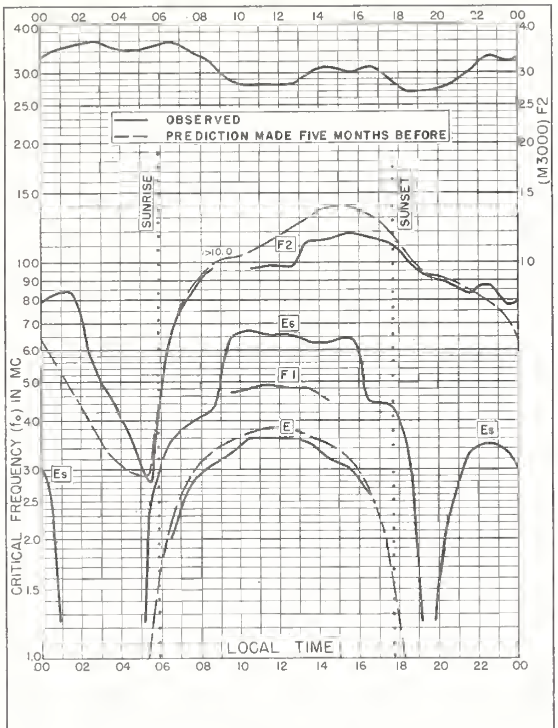
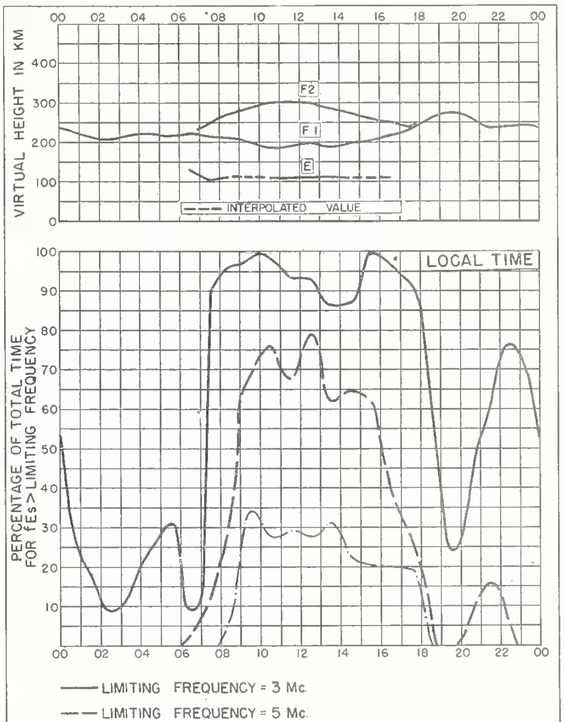


Fig. 137. DJIBOUTI, FRENCH SOMALILAND
11.5°N, 43.1°E OCTOBER 1952



OCTOBER 1952
Fig. 138. DJIBOUTI, FRENCH SOMALILAND

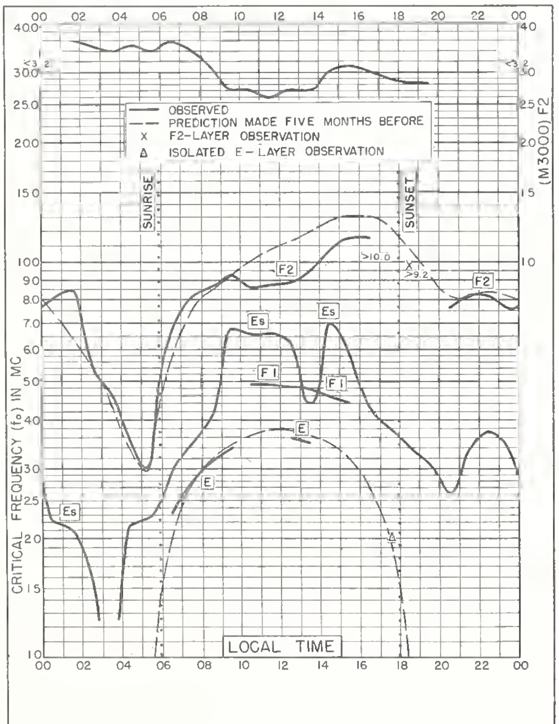
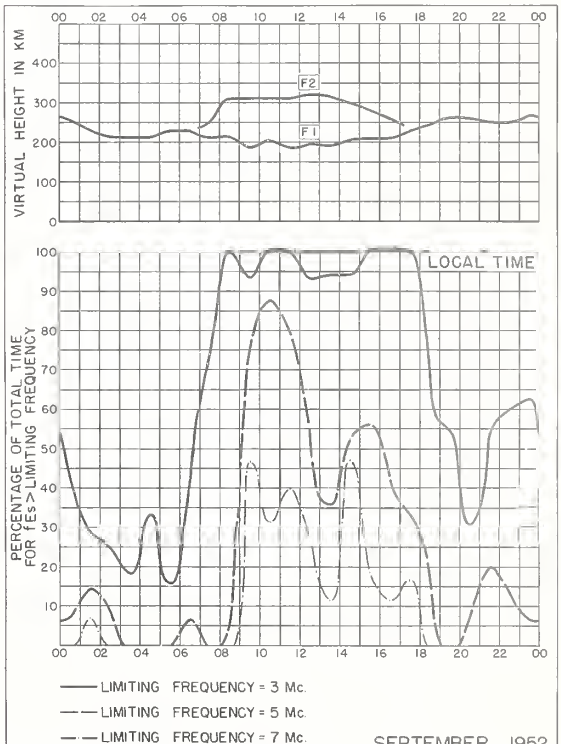


Fig. 139. DJIBOUTI, FRENCH SOMALILAND
11.5°N, 43.1°E SEPTEMBER 1952



SEPTEMBER 1952
Fig. 140. DJIBOUTI, FRENCH SOMALILAND

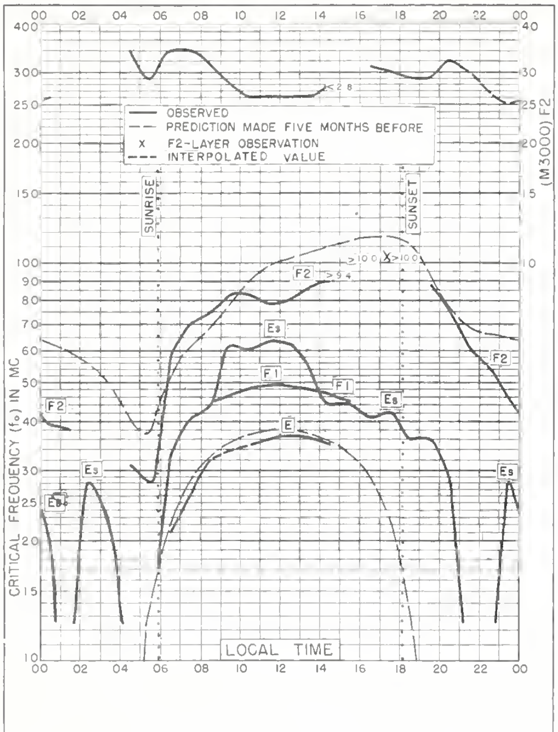
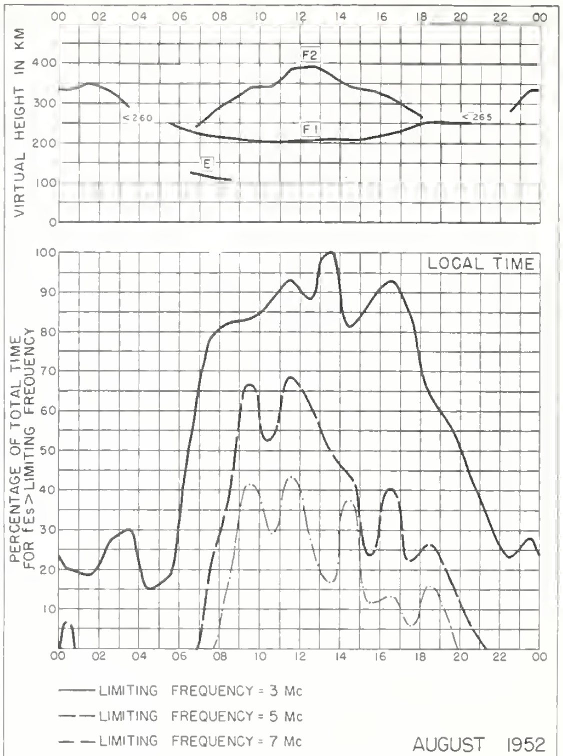


Fig 141. DJIBOUTI, FRENCH SOMALILAND
11.5°N, 43.1°E AUGUST 1952



AUGUST 1952
Fig 142. DJIBOUTI, FRENCH SOMALILAND

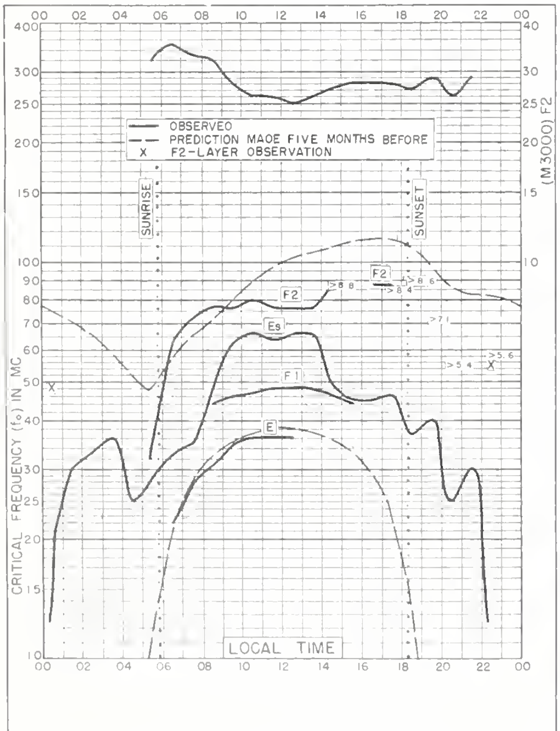
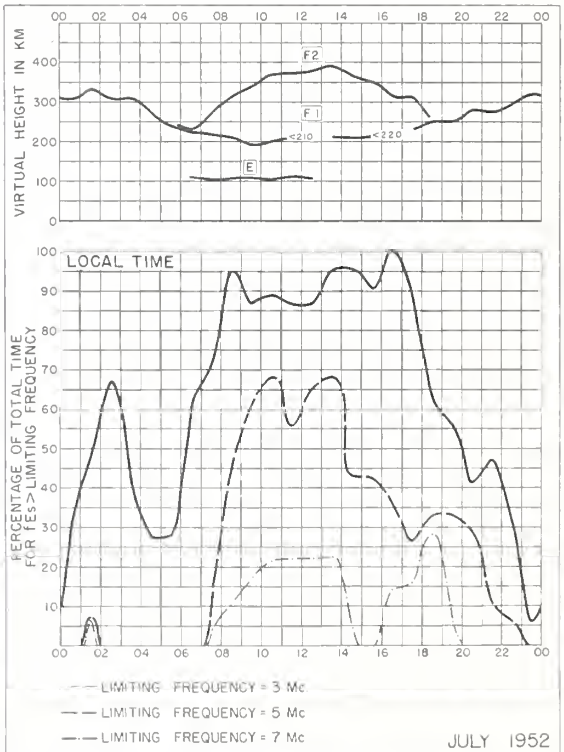


Fig 143. DJIBOUTI, FRENCH SOMALILAND
11.5°N, 43.1°E JULY 1952



JULY 1952
Fig 144. DJIBOUTI, FRENCH SOMALILAND

Index of Tables and Graphs of Ionospheric Data

in CRPL-F123

Index (CRPL-F123, continued)

Index (CRPL-F123, concluded)

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